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ABSTRACT

This report establishes a definition of the phenomenon of adolescence against which to consider research needs and reviews current research issues in adolescence. Research related to adolescence conducted by federal agencies in fiscal year 1973 is described in terms of both the overall research picture and the particular nature of the work of each agency. Anticipated adolescence research plans of each agency for FY '74 are outlined, and a summary and analysis of these plans is compared with the statement of research needs as previously presented. Appendices include a table listing detailed agency plans for research in FY '74, and summaries of special interest group reports on work experience, marker variables, and vocational and career education programs. (MG)

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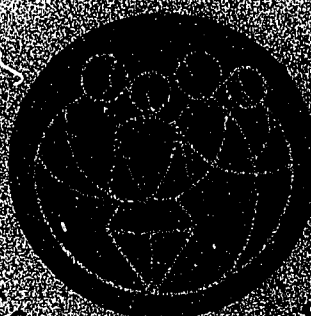
TOWARD INTERAGENCY COORDINATION

An Overview of Federal Research and Development Activities

Relating to Adolescence

First Annual Report

THE
INTERAGENCY
PANEL
FOR RESEARCH
AND
DEVELOPMENT
ON
ADOLESCENCE



Social Research Group
The George Washington University
Washington, D.C.

December, 1973

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TOWARD INTERAGENCY COORDINATION:

An Overview of Federal Research and Development Activities
Relating to Adolescence

First Annual Report

Prepared for
The Interagency Panel for
Research and Development on Adolescence

by

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for Research and Development on Adolescence**

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Office of Human Development (OHD)

Office of Child Development (OCD)

Office of Youth Development (OYD)

National Institute of Mental Health (NIMH)

National Institute of Child Health and Human Development (NICHD)

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Readers who wish to obtain a summary of the highlights of this report are referred to the following sections:

1. Introduction (pp. 1-3)
2. Chapter I: Summary of Research Recommendations (pp. 67-71)
3. Chapter II: Categories Used for Analysis (pp. 74-77)
4. Chapter II: Overview of FY '73 Research (pp. 78-91)
5. Chapter III: Overview of FY '74 Research Plans (pp. 145-152)
6. Chapter IV: Panel Plans for the Future (pp. 153-155)
7. Appendix A: Detailed Agency Plans for Adolescent Research in FY '74 (pp. 157-173)

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INTRODUCTION

Early in 1970, in response to a Presidential message calling for the coordination across agencies of Federal programs affecting children, the Director of the Office of Child Development convened the Interagency Panel on Early Childhood Research and Development. Since its inception this Panel has participated in a number of activities in the pursuit of its primary objective of promoting the cooperation of member agencies in the coordination of interagency research efforts. When concerns about older children began to emerge, the formation of the Early Childhood Panel provided an example for the establishment of an Interagency Panel for Research and Development on Adolescence. Following an exploratory meeting of agencies interested in research on adolescence, the official organizational meeting of the Panel on Adolescence was held in October, 1972.

The formation of the Interagency Panel for Research and Development on Adolescence was, in part at least, a result of two factors emerging concurrently: the growing recognition of the importance of the adolescent years in the life cycle and the increased attention focused on adolescents following their increase in numbers after the post-war baby boom. The greater numbers of young people and growing problems of youth in the 60's has brought to a dramatic focus the ambiguity and confusion regarding the role of adolescents in our society and has initiated a stern appraisal of the institutions traditionally used to fit them for adult roles. What institution, for example, has received closer scrutiny and has been the subject of more criticism in the past decade than the school?

The possibly unrealized potential of the modern adolescent and the serious societal problems associated with youth should make the period of adolescence an exciting and promising one for research. However, one authority, John P. Hill, has noted the paucity of research on adolescence as a period in the life

cycle. There are few areas, he states, "in which investigations relating to the key issues of adolescence have moved beyond exploratory efforts and clinically based theoretical formulations," (Hill, 1973, p. 89). Thus, while there are many questions which research can help to answer, it is only in the past few years that the research community has begun to respond in a substantial way. With events in society and young people themselves demanding more attention, the formation of the Panel on Adolescence has been timely and the challenge is great.

The preparation of this report may represent a starting point for joint planning by the Panel. The report begins with a review of current research issues in adolescence, analyzes last year's research efforts in Chapter II and describes in Chapter III the research plans for the agencies in fiscal year 1974, comparing plans with research needs.

Review of a Year's Effort

During its first year of operation the Panel on Adolescence, working in close contact with the Early Childhood Panel, has entered upon a number of activities. Both Panels are provided general research and support services by the Information Secretariat, established within the Office of Child Development in 1971. Monies for staff support are received from member agencies on the Panel, with the major portion provided by OCD.

One of the first activities of the Panel was to add appropriate categories for research on adolescence to the computer-based information system initiated by the Early Childhood Panel. This system contains information submitted by member agencies on research relating to adolescence and is available for use by Panel members and others. (Policy guidelines for the release of information and the procedure for obtaining information from the system are contained in Appendix E.) The collection, classifying and coding of research project information is a major yearly effort of the Panel staff. The coded information is used each year for the production of the annual reports of the two Panels. Information provided by the system was used for

preparation of Chapter II below, containing the description and analysis of the fiscal year 1973 Federal research effort on adolescence. It is expected more use will be made of the information system in the coming year, both for Panel projects and by individual agencies.

In addition to the annual report, the Panel also produces state-of-the-art documents in areas of special interest to Panel members. During its first year the Panel released a report on Federal vocational and career education programs, which included an analysis of current research and recommendations for future research in the area of work experience. The report, Work Experience as Preparation for Adulthood is summarized in Appendix D.

As a follow up to this document, the Panel has held a number of special interest meetings related to research needs and possibilities in the area of work experience. The outcome of the meetings on work experience as a focus of Panel interest are reviewed in Appendix C. The purpose of these meetings is to explore the potential of the subject for joint agency research activity.

The same is true of the special interest group on marker variables and marker measures which is attended by members both from the Panel on Adolescence and the Early Childhood Panel. This group is exploring means by which more useful cross research analyses may be made. (See Appendix B for a more detailed discussion.) Much of this group's discussion thus far has been devoted to the concept of marker variables and marker measures, i.e., the identification and description of critical background variables and accompanying measures of the sample populations in Federally funded research projects.

The joint participation in the marker variables meeting is representative of the common interests of the two research Panels. In the coming year it is expected the Early Childhood Panel and the Interagency Panel for Research and Development on Adolescence will continue to seek ways to facilitate the coordination of research affecting children and young people.

CHAPTER I

CURRENT CONCERNS IN RESEARCH ON ADOLESCENCE AS A DEVELOPMENTAL PROCESS AND AS PREPARATION FOR ADULTHOOD

Purpose and Overview

The purpose of this chapter is twofold: one, to establish a definition of the phenomenon of adolescence against which to consider research needs and, next, to present a sampling of significant research areas and questions within the context of current, relevant research and social issues. The first part of the chapter, defining adolescence, describes some of the characteristics peculiar to the age group 10-24 (the age range of concern to the Interagency Panel for Research and Development on Adolescence). The second part covers the developmental process; the interventions and programs which affect the health and social well-being of young people; influences and institutions used by society to prepare youth for adulthood; and some general approaches to research which relate to content or process. Each of these topics includes several elements which are discussed one by one: for each element, pertinent research issues and questions are reviewed. The chapter concludes with a summary of research recommendations taken both from the preceding section and from additional sources.

The information for this chapter has been derived from discussions with Panel members and others knowledgeable about research needs, from a variety of agency documents and from a number of special reports prepared under the auspices of Federal and non-Federal agencies. It is not meant to present a state-of-the-art picture in adolescence as such--past research, for example, is not reviewed here--but to outline issues of current relevance and to spotlight significant areas of concern to researchers. Examples of research questions are included for illustrative purposes.

No attempt is made to relate research needs and recommendations to government policy questions except as they may have been exemplified in agency objectives and translated into agency research efforts.

The Phenomenon of Adolescence

What are the attributes of the adolescent? To start, let us note that the modern view of the adolescent is different from that held a hundred years ago and is both a cause and result of the segregation of youth from adults that is characteristic of today's society.¹

One way to define adolescence is in a biological sense--it may be thought of as that stage of development in the life cycle beginning with the onset of puberty and ending with the completion of physical growth. It may also be defined sociologically as the transition period from dependent childhood to self-sufficient adulthood, and psychologically as a situation in which

¹Two views of the historical reasons for age segregation are as follows:

When ours was still an agrarian society, the needs of youth were necessarily subordinate to the economic struggle, and the rudimentary occupational requisites permitted them to be brought quickly into adult productivity. The dominant institutional setting within which they grew up were the home and the workplace. Choices in the occupational sphere were few: the future roles of the children were generally well-exemplified by those of parents. In short, the task of socialization was resolved by early and continual interaction with the parents and nearby adults.

But as our society moved into the modern era, the occupational structure became progressively more a matter of movement into activities different from those of the parents. A long period of formal training, under specialized instructors, was initiated to provide the cognitive skills necessary for satisfactory performance as a adult, and equality of opportunity itself required postponement of decisions. To accomplish these tasks, institutions to provide the instruction were designed, and rules were formulated with respect to school and work. Specifically, schooling to an advanced age became compulsory, and automated promotion, age by age, became the norm. Laws were established against child labor, and minimum wages were specified. These latter not only served their prime function of protecting the economic security of the breadwinner, but also delayed the entry of the young person into the labor force.

adjustments have to be made that will distinguish between behaviors associated with children and those of adults (Konopka, 1973).

As expanded and different view of adolescence was found in many of the documents reviewed for this report. This view and some of the significant characteristics of adulthood are discussed by Konopka:

(Continued from previous page)

In consequence, the schools and colleges came to provide the general social environment of youth. The world of the maturing child, formerly dominated by the home, is now monopolized on the formal level by the school and on the informal level by the age group. The typical young person has a long preparation for his occupational future, within a highly structured school system, interrupted only by some work at marginal tasks (either part-time after school, or during the summers) and terminated by entry into the labor force or motherhood. (Report of the Panel on Youth of the President's Science Advisory Committee, 1973, pp. 1-1, 1-2).

Hill's view suggests a possible basis for the seeming ambiguity toward youth expressed by adults:

The lengthy period of "preparation of life" has come to be justified on grounds of the complexity of society and the need for increased schooling to survive or thrive in a highly differentiated and skilled labor market. It is doubtful whether this justification will hold water. The nature of the labor market for the young has, for many years, been such that society requires schools to keep the young out of jobs rather more than to put them in. The introduction of compulsory education occurred, as Musgrove (1964) points out, when there was a surplus of young people in the population for the jobs available and when advances in technology began to displace the young workers.

The introduction of compulsory education itself may be regarded as one of the milestones in a continuing process of segregating the young from adults. At the turn of the century, the mixing of the young with the old was held to stimulate precocity (Hall, 1904) and segregative measures sanctioned because they prevented it. It appears that the disease was necessary to rationalize the cure. Today, where the segregation is maintained, it is rationalized in similar ways.... Justifiable segregation of young people requires that they be seen as different from you and me and that the difference be due to "natural causes." (Some Perspectives on Adolescence in American Society, John P. Hill, 1973, pp. 96-97)

Once more we emphasize that we do not see adolescence purely as preparation for adulthood. Rather we see it as one part of the total developmental process--a period of tremendous significance distinguished by specific characteristics. Basic to our view is the concept that adolescents are growing, developing persons in a particular age group--not pre-adults, pre-parents, or pre-workers, but human beings participating in the activities of the world around them. In brief, we see adolescence not only as a passage to somewhere but also as an important stage in itself. (Konopka, 1973, p. 9)

Adolescence is a time of a variety of new experiences. Some of these experiences are:

1. Physical and sexual maturity.
2. Withdrawal of and from adult protection.
3. Consciousness of self in interaction with others.
4. Formation and clarification of values.
5. Experimentation.

In addition, adolescents display a mixture of audacity and insecurity, loneliness and vulnerability, strong peer group need, mood swings and argumentativeness. Finally, Konopka suggests we think of this period as an age of commitment and a move toward the true interdependence of men, as the struggle in adolescence between dependence and independence is resolved (Konopka, 1973).

Adolescence then is not discontinuous from the rest of the human development cycle, it is part of it; it is a time not only of inner turmoil but of important interactions with a variety of people and situations in the real environment. Hill subscribes to these views, and in addition points out that youth are not the homogeneous group that is implied by use of such terms as "teen-age culture" and "adolescent society." "Where adolescents are concerned, we are sufficiently prone to stereotypy to make the phenomenon an important one for study in its own right" (Hill, 1973, p. 7).

Hill believes that these three perspectives: the concepts of homogeneity, discontinuity from the life cycle, and the dominance of intrapsychic forces "have generated a limited set of

concepts which distort the approaches to adolescence of parents, practitioners and scientists" (Hill, 1973, p.2):

As a result the continuities which bind adolescence to childhood and adulthood are likely to be ignored or underplayed in research and in practice. The diversity of the settings in which children become adolescents and adolescent adults is de-emphasized and, consequently, the varieties of adolescence experience are disregarded. There is little public knowledge about the ways in which the social environment interacts with the person in the determination of adolescent behavior and relatively little effort to develop models for this interaction which would aid scientists and ultimately practitioners and parents, in understanding the period. (Hill, 1973, p.2)

In the discussions to follow, which address the areas of greatest current concern to researchers and the research questions that emerge from these concerns, it will be useful to keep in mind these influencing perspectives and the broader definition of adolescence spelled out above. This is the view which sees adolescence as an important period of the life cycle in its own right which requires direct experience for the acceptance of responsibility and commitment to adult concerns.

Current Issues and Related Questions in Research on Adolescence

In the following review of some of the research issues and questions which are of present concern to the Federal research community, three aspects of the developmental process are included, i.e., the cognitive, socio-emotional and physical components. Some of the determinants of healthy growth and development of adolescents are reviewed and the major institutions and interventions used by society to assist the transition of youth to adulthood are examined. Finally, some recommended general principles or approaches to research are discussed. The information in this section follows the organization used in Chapter II for the analysis of research conducted by Federal agencies in fiscal year 1973. The four major categories used as a basis for discussion and analysis are the following:

1. The Process of Growth and Development.
2. Influences on Healthy Growth and Development.

3. Institutions for Socialization and Preparation for Adulthood.
4. General Principles and Procedures for Research.

The Process of Growth and Development

Any analysis of ways or means to achieve the two objectives for youth suggested above, that is, optimum growth and development and effective preparation for adulthood, must take into account the unique developmental changes taking place during the time called adolescence. Profound biological, intellectual and social-emotional changes occur and these changes are spread over a long time-span--from ten to twelve years of age to the early twenties.

This long time period, beginning with the first signs of sexual maturity, sets wide limits for the progress and termination of the growth process. Physical maturation itself, which lays the groundwork for adolescent development in other areas, while normally following a definite sequence, varies widely in timing, rate and extent. The onset of biological change in boys, for example, may begin anywhere between ten and fourteen years of age (Hill, 1973). Change in cognitive structure is even more varied in the age of its appearance--ranging from eleven in some children to the early twenties in others. Among the kinds of diversity in the growth process which influence research are the following which were enumerated in the Report of the Panel on Youth, a special study group of the President's Science Advisory Committee:

The age period 14 to 24 is characterized by great diversity in (1) the physical and physiological status of persons at the upper and lower ends of this age span, (2) the rate at which physical and physiological changes occur, in terms of both individual differences between the younger and older portions of the continuum, and (3) the range of developmental status among individuals of the same chronological age during the earlier part of the period. (1973, p. 2-6-1)

Thus, conclusions with regard to the study of the growth process must be applied with caution in any individual instance.

Another principle of adolescent development is that the physical, cognitive and social-emotional changes have a reciprocal influence on one another, with events at any one level able to impede or to accelerate developments at each of the others. Physical changes, for example, "may be modified by a variety of hereditary, environmental, nutritional and emotional factors" (Hallstrom and Banda, 1972, p. 11). Thus, although traditionally each component of the process and the research problems associated with it are treated separately, the interactions and reciprocal influences must be kept in mind as one studies the developmental process and what influences it.

We do not intend to describe here the changes in each of the three areas of development. Rather we will concentrate on research issues and questions associated with physical, cognitive and social-emotional growth. For those who desire more detail on the actual changes, a number of references are available. Those used in this report, which contain useful reviews, are listed below.²

In the Federal government, the National Institute of Child Health and Human Development has initiated an expanded research program to broaden knowledge of adolescent development. Most of the research recommendations on the process of adolescent development have been taken from documents of this agency or were presented at a recent NICHD conference, Adolescence in the Life Cycle (Hunt Valley Inn, Hunt Valley, Maryland, October 2-5, 1973). The kinds of studies recommended are primarily basic biological and behavioral research. Only examples of the kind of research needed are given. A complete listing of questions is not intended.

²The Provision of Health Care Services to Adolescents in the 1970's, Minnesota Systems Research, Inc., 2412 University Avenue, S.E., Minneapolis, Minn. 55414; Youth Transition to Adulthood. Report of the Panel on Youth of the President's Science Advisory Committee, Office of Science and Technology, Executive Office of the President; Some Perspectives on Adolescence in American Society. John P. Hill, Cornell University.

Physical Growth. The hormonal changes that signal the onset of puberty are perhaps the most significant that occur during adolescence. They are the basis or accompaniment of all that follows. In the physical or biological area, therefore, study is needed on the hormonal changes which occur at puberty, "since the exact nature of the events which trigger the onset of puberty remains unknown" (NICHD, 1973, p. 5). The action of gonadal hormones upon neural development is of considerable importance, and it is necessary at the biological level "to study and characterize more exactly the morphologic, biochemical and physiological changes induced in the central nervous system." Such knowledge is "relevant to the understanding of the sex differences which become more pronounced at puberty" (NICHD, 1973, p. 5). Puberty is a period of rapid growth as well as pronounced hormonal change and further study is also needed to fully understand the "growth spurt" phenomenon.

The study of the nutritional requirements of the adolescent is of major research concern. If the foundation of adolescent development is physical maturation and the various processes are interrelated, then adequate nutrition may be considered a key element to optimum development in all areas for every adolescent. According to the NICHD review (1973), although adolescence represents one of the most complex and critical stages in human development, almost no well-controlled quantitative studies of nutritional requirements have been reported for adolescents of either sex. The rapid and highly individualistic growth pattern of adolescence contributes to the difficulty of determining nutritional needs and allowances. Therefore, one area of high research priority is to develop ways to better categorize the maturational state of adolescents, in order to establish reference points for expressing requirements. Other areas for study are: (1) the nutritional implications of stress situations such as erratic sleep patterns, abrupt changes in food intake, or extreme physical activity; (2) the definition of amino acid requirements for adolescents upon which the establishment of

standards for other nutrients depends; and (3) the impact of contraceptive steroids and of pregnancy on adolescent nutrient requirements.

Cognitive Development. The area of intellectual or cognitive functioning has received even less research attention at the adolescent level than the physical area. Perhaps the most striking cognitive characteristic to emerge is the ability to conceptualize at an abstract level, to think at a higher level of generalization. What Piaget calls the development of "formal thought or operations" has a direct relationship to the emergence of other characteristics associated with adolescence:

Many of the adolescent's social-emotional concerns are related to his acquisition of formal thinking. For example, his concern with values and his frequent dissatisfaction with the world and with his parents are dependent on his newly discovered cognitive awareness of the discrepancy between the actual and the possible. In addition, without the capacity for conceptualizing hypothetical alternatives, the adolescent would not be able to have the much discussed "identity crisis." Thus, an understanding of the development of values and morals, of rebelliousness, and self-consciousness, and of many of the social problems related to adolescence depends in part on a more complete understanding of intellectual functioning during this period. (NICHD, 1973, p. 12)

More research is needed on the nature of cognitive development during adolescence and on the interdependence and interaction of cognitive growth and personality development. The implications such knowledge will have for education are relevant:

Basic research on both typical changes in intellectual functioning and on the sources of individual differences have important implications for our educational system. For some reason many young people do not finish high school. Many more graduate, but without adequate mastery of even basic skills and with little if any zest for continued intellectual-creative pursuits. Although structural-physiological limitations may play a part, it seems that for most adolescents the problem is a decline of intellectual interest which may have been produced in a large part by the very system which is supposed to facilitate learning and creativity.

One of the problems may be that our school curricula are not structured so that the demands of the program are synchronized with the individual's intellectual development. This correspondence is, of course, impossible to achieve unless or until more is known about intellectual development. However, there has already been the serious suggestion that certain cognitive skills could be better and more easily taught, at least to some children, much later than is now the case. It seems clear that a better understanding of adolescent intellect would provide us with information necessary to understand the consequences of earlier experiences, e.g., the attempts to accelerate early cognitive development. There is reason to believe that a better understanding of the causes underlying adolescent intellectual apathy will help deal not only with failure in high school, but also with earlier problems such as difficulties in reading. (NICHD, 1973, p. 11)

(Some skills, on the other hand, may be learned by adolescents and younger persons at a much earlier age than traditionally believed possible. The career can begin profitably as early as kindergarten.)

Finally, the study of intellectual functioning should be beyond the traditional concern with IQ differences and include "an attack on the relative ignorance which we have about the typical changes and development of thinking, language perception, learning and other cognitive functions just preceeding and occurring during adolescence" (NICHD, 1973, p. 10). Most work in these areas has been done with infants and young children and the effort must be expanded both vertically and laterally.

Social-Emotional Development. Still using the NICHD document as a major reference, we conclude this section with a review of research issues within the affective domain that are related to social-emotional development. Since the nature and quality of parenting and family patterns have a tremendous influence on personality development, a fruitful area of study would be to examine the effects of changing family structures and functions and to look at the variables that have the most impact on personality development. For example, what are the effects of today's higher levels of parental education and ex-

pectation, decreased communication between parents and between parents and child, and redirection of parental interests to work, community or personal activities? Is there a relationship between evidences of instability in teenagers, such as running away, use of drugs and dropping out of school, and the changes in family functions? In addition, study of the common factors in differing family structures (including single parent families) that contribute to development would be of value:

Studies in these areas have generally been inadequate. Many frequently cited studies present a cross-sectional view of problems that can best be approached in a longitudinal way. Others are out of date. Not only do we need new, more current information, but careful consideration must be given to appropriate methodology for obtaining useful insights. (NICHD, 1973, p. 13)

Another important area of study is related to the segregation of young people from adults and from younger children. How does such age segregation and segregation by sex, income, IQ and race affect social and emotional development? What is the effect of segregation upon the later assumption of adult roles and responsibilities? What other results may be traced to the formation of an alienated youth culture which is both a result of and a basis for continuing the segregation of young people?

One of the outstanding characteristics of the period of adolescence is the expectation of a rapid shift to different identities and functions. Many adolescents have difficulty meeting this expectation and the ability to cope with the requirements for change may not be adequate. "Studies of coping mechanisms or coping solutions will provide insights to help identify additional critical issues in adolescent emotional and social behavior" (NICHD, 1973, p. 14). In addition, the expectations and attitudes of adolescents about work and specific occupations, for example, need further study.

One of the major problems or research is the need for instruments for measuring changes in various aspects of develop-

ment. The need for instruments for measuring personality changes is especially great. The effect of various influences on social and emotional growth seems particularly difficult to measure and major documents discussing personal growth cite the need for the development of affective measures.

Other areas recommended for research include "cross-cultural studies of adolescent behavior in pre-literate and modern societies to help clarify research questions," and studies of ways to train new kinds of youth workers who may be needed to work with today's young people (NICHD, 1973).

Influences on Healthy Growth and Development

Since the effective socializing of youth into adulthood requires normal or healthy development as a foundation, we will discuss in this section some of the critical societal influences on the health and welfare of young people. To be considered are two major kinds of influences: (1) health care programs and services, including those concerned with physical and mental health, and (2) social welfare programs and institutions, including selected programs established at the Federal or the local level to deal with the problems of the young. (The family and the peer group are recognized as having an important effect on the health and maturity of the adolescent but their important role is discussed in the following section on major socializing agents.)

Health and welfare programs are frequently established to solve existing problems and needs, thus serving a remedial rather than a preventive function. And health and welfare research generally follows a deficit model based on failure rather than potential success. Thus, a major research issue for both health and welfare programs is the determination of the most beneficial allocation of resources between preventive and remedial programs.

Physical Health. With regard to the health area, one of the observations made in the NICHD document (1973) was that the heavy emphasis on the needs of young children in recent years has

decreased the attention and services provided to adolescents and that there is little coordination of services or planning at Federal, state or local levels. A recent summary document prepared for the Office of Child Development supports the observation:

The majority of existing Federally supported delivery programs concentrate on younger children, i.e., those six years of age or less. The older or adolescent child is less likely to receive services delivered from Federal programs. His needs are only met by Federal programs, if at all, through assistance in payments for services which he himself seeks out, through some categorical service programs, and through a few delineated special projects for adolescents where training and research are also important objectives. (Hallstrom and Banda, 1972, p. 1)

Therefore, a major focus of attention in health care for adolescents should be that of studying the kinds of health delivery systems that best meet the needs of adolescents, as well as the kinds of health care programs that need to be delivered.

Moving on to specific health care areas, a major concern in several agencies and one related to other research issues is that of pregnancy among the young and, particularly, in unwed adolescents. The research emphasis here is primarily on (1) medical care during, before, and after pregnancy and study of the effects of early pregnancy; and (2) education and training to improve the mental state of the mother-to-be, her functioning as a mother, and her ability to support herself and her child following the delivery.

Of special importance during early pregnancy is good nutrition. We have discussed above the importance of nutrition to physical development. The following reemphasizes its importance:

To put the matter in explicit terms, inadequate nutrition results in stunting, reduced resistance to infectious disease, apathy, general behavioral unresponsiveness, reduced neurointegrative competence and concomitant reduced intellectual functioning. It may be stated, then, that in a very fundamental sense, nutrition occupies a central position in the multitude of factors affecting a young person's development and functional capacity. (Hallstrom and Banda, 1972, p. 99)

And even though nutrition is of utmost importance during adolescence, the National Nutrition Survey report of 1972 found that "among the various age groups surveyed, adolescents between the ages of 10 and 16 years had the highest prevalence of unsatisfactory nutritional status" (Hallstrom and Banda, 1972, p. 101).

Looked at from the view of service delivery in general, i.e., improving the overall availability of food, Federal nutrition programs utilize the categorical approach to funding which has been prevalent in health care (and other) areas. (This is funding to meet primarily one discrete problem, rather than several related areas of need.) It is recommended that research be directed to the study of different kinds of delivery systems for nutrition programs as part of "comprehensive (complete and continuous) health care delivery programs" (Hallstrom and Banda, 1972, p. 206). "Complete" care is essential because the individual suffering from undernourishment, for example, is "not just a case of malnutrition," but a person with other health problems. "Continuous" care is needed both in the sense of followup and "as an extension of the pediatric continuum" to the age group falling between childhood and maturity.

Fact-finding on specific issues is becoming a major research priority in many areas. The design and implementation of more effective food programs, for example, depends on the collection and analysis of national data pertaining to present programs. Initial surveys need to be made to collect a base of information about the current situation in other health areas as well.

The care and rehabilitation of physically handicapped youth is a large and important area in the total health service picture. Needed research includes the following: the development of better diagnostic and treatment procedures; ascertaining the kinds of rehabilitation services presently

available and those that are lacking; development, validation and evaluation of alternative models of service delivery and services integration techniques; and staff training for using new models and techniques. Rehabilitation research includes not only study of ways to improve recovery from specific handicapped conditions, but ways to provide education and training, and to prepare the handicapped for employment. Those who are the subjects of research and service in this area include the developmentally disabled, the mentally retarded, heart disease patients, the deaf, the blind and those suffering loss of limb, to name a few.

Emotional Health and Social Well-Being. The mental and emotional health problems of young people present critical questions for the researcher. Such problems may be looked at in two ways: (1) as social and socio-psychological forms of maladjustment, or (2) as mental disturbances which may have a biochemical basis. Considering the latter first, research on the causes and prevention of mental illness in young people is part of the larger field of the study of mental illness in general. Two significant areas pertaining to adolescence that need study are: (1) the influence of the disturbance of developmental and pubertal changes on the course of mental disorder, and (2) minimal brain damage as a factor contributing to maladjustment. With regard to the effects of brain damage, "disabilities which may have their basis in minimal organic lesion, such as impulsiveness, short attention span, or dyslexia, may lead to problems in school and at home" (Hallstrom and Banda, 1972, p. 41). As parents or teachers react to these symptoms with frustration or irritation, the child's own feelings of security may be impaired, causing further delay and disturbance of psychological maturation.

More study is needed of the services available to disturbed young people. Although one-third of the patients in outpatient psychiatric clinics are known to be under 20, the

extent of the treatment of young people in community mental health centers, for example, is unknown (Hallstrom and Banda, 1972, p. 42). Here is another area where the establishment of an information base is necessary for the planning of additional research and health care.

Child abuse, which may be both a cause and result of mental or emotional disturbance, is an emergent area of research concern. And while this phenomenon is generally associated with young children, it can and does frequently occur in the form of sexual molestation of young adolescents, sometimes by older adolescents. Neglect by families and society of children is probably even more prevalent than abuse. The effects and causes of the abuse and neglect of children will receive increasing research attention. Especially urgent is the need for studies of ways of preventing the occurrence of child abuse (Alpher, et al., 1973).

Moving on to the second kind of problem, social and social-psychological forms of maladjustment frequently take the form of juvenile delinquency--a term which covers a wide range of illegal acts committed by young people between the ages of about 10 to 18 years. While it is difficult to measure the exact nature and extent of juvenile delinquency, available evidence indicates a substantial increase in recent years:

For example, arrests of persons under age 18 doubled between 1960 and 1970, and accounted for 29 percent of all arrests in 1970. The recidivism rate for youthful offenders hovers between 50 and 75 percent. Arrests of juveniles for crimes that worry people most--murder, rape, aggravated assault, robbery, burglary, larceny, theft and auto theft--registered a 95 percent increase during the decade and accounted for nearly one-third of all juvenile arrests in 1970....

At the other end of the scale another one-third (approximately) of the arrests were for offenses that are not crimes in the adult sense--running away from home, violation of curfew laws, incorrigibility, truancy....

A conservative estimate of the total number of juvenile arrests in 1970 (latest date for which data have been compiled) is about two million.... About half of the individuals arrested were sent to court and about half of those--some 500,000 youngsters--were formally removed to the juvenile correctional system. (SRS, 1971, p. 1-2)

Although research has long sought to identify the characteristics that make a young person particularly vulnerable to delinquency, objective tests that can predict delinquent behavior have yet to be designed. Further, some research studies have indicated that quite normal children have been seriously delinquent (Hallstrom and Banda, 1972). The background, circumstances, development and experience of young offenders are widely heterogeneous.

Current thinking suggests that the high incidence of delinquency may be a result of the segregation of youth from adults and their exclusion from "socially acceptable, responsible, and personally gratifying roles" (Delinquency Prevention Reporter, 1972, p. 3). This concept, and the prevalent attitude among some that incarceration is inappropriate treatment for adolescents, has lead to development of new methods for the prevention and treatment of delinquency. These methods call for basic changes in institutional structure. The emphasis of the new approach is to divert youth away from the juvenile justice system, and several models requiring institutional change have been developed: the school model, the welfare model, the law enforcement model, and the community organization model (Hallstrom and Banda, 1972). The latter represents the trend in health and welfare service delivery in general to the provision of comprehensive and integrated services at the community level. The delinquency programs, which are intended to serve a preventive or rehabilitative function, include halfway houses, after school and summer recreation programs, foster home or group home care, youth service bureaus, volunteer programs or other community services (SRS, 1971). One of the essential features of this

approach is the involvement in the planning of the local program of youth and parents in the area served. This and other models for delinquency treatment and prevention must be carefully studied and evaluated. Some of the areas for research are data collection, measurement of impact, systems development and processes for institutional change.

It is believed the role and impact of various components of the juvenile system also should be studied. Police, courts, correctional institutions, detention homes and probation and parole authorities need to be examined and their effectiveness judged within the context of the following assertion found in a Congressional committee report:

We feel that basic law enforcement techniques are not the correct procedure for dealing with the juvenile delinquency problems confronting us. There must be more understanding, research, conceptualization and experimentation. Arrest and incarceration are not the answer to juvenile delinquency problems. They have their place but it is not with young people. (From House Committee on Education and Labor Report on the Juvenile Delinquency Prevention and Control Act of 1971 in Delinquency Prevention Reporter, July-August, 1972, p.41)

Members of the White House Conference on Youth suggested the proper uses of the juvenile justice system can be discovered through research and demonstration based upon increased knowledge of how the system operates and who gets involved. Recommended also was the study and revision of present laws affecting youth and law enforcement techniques (White House Conference on Youth, 1971).

A critical area of illegal activity by adolescents is that of drug abuse. The causes, effects, detention, treatment and prevention of drug abuse are the object of a great deal of public discussion and research attention. Numerous Federal agencies are involved in one way or another with the study of drug use and its reduction (Searcy, 1973). As long as the use of drugs by young people continues at a high or increasing level, spreading downward in age and outward to affluent and middle

class communities, it is likely there will be continued Federal concern and research support. Alternative methods of delivery of drug treatment and rehabilitation programs are being investigated, with a major focus on the development of drug antagonists, or substitutes, as an interim solution to the drug abuse problem.

Involved in the social welfare situation of adolescents is the matter of children's legal status and rights. Persons below the age of majority (18 or 21 years), the age at which one is deemed legally competent to assume responsibility for his person and property, are subject to various disabilities not imposed on adults and at the same time are accorded certain protections denied to adults. The question of legal rights of the young challenges some of the traditional attitudes about the proper relationship between young and old. For example, the current concern about child abuse raises difficult questions about the legal control of parents over their children. Other difficulties are discussed as follows:

The problem is at what point do societal controls over youth cease to be legitimate protections of the welfare of young people and become instead unwarranted constraints. From one perspective protection becomes unwarranted constraint when agencies such as schools, juvenile courts, correctional institutions, shelters for the neglected, and institutions for the handicapped and mentally retarded fail to discharge the educational, benevolent, and therapeutic functions entrusted to them. Just as young persons are entitled to secondary protection by social institutions against neglectful and abusive parents who are intended to be their primary agents of protection, they are entitled to protection against neglectful and abusive social institutions. Recent court decisions indicate increased respect for the minors' constitutional right to due process and equal protection of the law. Various proposals have been made for establishing children's advocates or ombudsmen at various levels of government. (Panel on Youth, 1973, p. 3-24)

The situation requires experimentation to try out alternatives to present laws and legislation affecting children, along with pilot projects to evaluate various kinds of advocacy structures for young people.

For older adolescents, different forms of and alternatives to military service are of primary interest, including various arrangements for service in an all-volunteer force. Laws governing conscientious objectors, refusal to obey military orders, and draft evasion are all subjects for study within the boundaries of the legal rights and responsibilities of young people.

This section on health and welfare services has pointed out both content areas and process areas that are considered to be of current research importance. Some of the specific content areas mentioned were pregnancy among unwed teenagers, nutrition, rehabilitation of the handicapped, mental illness, child abuse, juvenile delinquency, drug abuse, and children's rights. In the process area, information base studies and research on coordinated and comprehensive health delivery systems were recommended and the need for continuous, multi-agency research funding was implied. It was also suggested that more attention be given to research to develop preventive measures for many health and welfare conditions so that less support might be needed eventually for remedial programs.

To conclude this section, some additional brief recommendations are made. It is believed funds should be used to support training grants to prepare workers dealing with adolescents and that the team approach is of great importance in this area. Studies are necessary to determine the kinds of positions and training that are the most successful in meeting the health care needs of adolescents (Hallstrom and Banda, 1972). Another area for study is determining the success of different kinds of screening techniques. Specifically, is the child referred promptly and appropriately through the levels of screening, diagnosis, treatment and followup, and at what cost (Hutchins, 1973). And finally, with limited funds available for health programs, the question arises whether more time and resources should be devoted to criteria-referenced evaluation of current

programs and services, in this way deriving the greatest amount of information (return) from already invested dollars (Hutchins, 1973).

Institutions for Socialization and Preparation for Adulthood

This section discusses research related to the basic institutions of society that influence youth's preparation for the assumption of adult roles. These institutions are family, school and work.

Perhaps the most significant feature of these societal influences is found in the fundamental changes that are in the process of occurring in each--changes that are interacting and together will have an increasingly profound influence on the development of young people.

The changes in family structure and function, and more lately in the schools and workplaces, became increasingly noticeable in the years following World War II and seem to have gained momentum ever since. Earlier, society passed through two distinct phases in its treatment of youth (Panel on Youth, 1973). In the first phase, where the family was dominant, young persons were introduced as quickly as possible to a work situation to aid the economy of the family. Knowledge, skills and value acquisition came primarily from the family--and from the church. Later, schools began to share more and more with families the responsibility for the socialization of youth. As the economy became more highly industrialized, young people were kept in school for more years, receiving instruction that was primarily focused on cognitive development. A counterpart of the second phase was an increasing exclusion of the young from adult concerns and responsibilities. They were given less and less opportunity to participate actively and directly in adult pursuits and to make decisions regarding their own and other's welfare. This age segregation of the young which burgeoned as the second phase continued, is a primary feature of society today (Panel on Youth, 1973). And in

reaction to it, the young have responded in two different ways--ways which are in a sense in conflict with one another, but may work together to accelerate the change in the structure of the family, the school and work.

One result of the segregation of youth from adults and their exclusion from adult activities was the growth of a distinct youth culture. This youth culture, while it does not include in its activities all youth or even the majority of youth, does express the dismay and frustration of many young persons who no longer have meaningful ways to participate in mature life roles (Panel on Youth, 1973). Youth culture and its many subcultures rest on the "social and psychological detachment of youth." It is a response of young people who are "deprived of psychic support" from persons of other ages, who are "subordinate and powerless in relation to adults," and who are "outsiders to the dominant social institutions." The preference of some youth to remain outside the establishment may raise serious questions for society:

For youth culture has provided many young people with a pleasing surrogate for maturity, just as their attachment to the youth culture often conceals a negative assessment of maturity and a positive preference of continuation of the irresponsible position in which they have been held as youth. (Panel on Youth, 1973), p. 3-2)

At the same time, this shunning of the establishment may represent in some youth an entrepreneurial inclination, which may need to be encouraged.

The second major reaction of youth to being excluded from adult roles and responsibilities is the desire for meaningful participation and involvement in life-learning activities, as well as the demand for equal status with adults. This is opposite to the withdrawal of youth culturites from the world of adults and their avoidance of adult responsibility. One report reviewing the current situation of youth suggests the following:

If the young people are not clear what to substitute in detail for what they reject, they are at least clear in asserting their right to be treated as responsible human beings, their claims of feeling life instead of either constantly seeking achievement or abstract intellectualization, and their need to "be" instead of either to produce or to do. All indications are that there is a great deal of valid protest that implicitly calls in question the intellectual assumptions and philosophical concepts that have fostered the growth of modern technology and modern American society and have led to the creation of a nation of "strangers" and an impersonal world in which people are reduced to computerized data and can be manipulated at will. (Hallstrom and Banda, 1972, p. 29)

The potential for change in these attitudes of the young is also described:

This expedience in thoughts and actions among our adolescents today is apt to create a demand for immediate experience of change and opportunity. Faced with this situation responsible adults should be concerned less about "the problem of youth" than about their own capacity to work alongside youth in educational institutions and elsewhere to create a more viable human environment. (Hallstrom and Banda, 1972, p. 29)

Thus, the positive striving for direct experience and involvement combined with the negative consequences of an alienated youth culture may work together to bring needed change in some of our socializing institutions.

The influence of the peer group, while not thoroughly understood in its process and effects, is very strong at the time of adolescence (Hill, 1973). This influence can have positive or negative effects, as the above discussion implies. While peer group pressure greatly influences the development and socialization of young people, more central institutions tend to be more influential. These institutions are the family, the school, and work. Some things are known about the impact of these institutions on the development and socialization of youth; more needs to be known.

The Family. Two hundred years ago the family was still the major care agent and socializing influence for young people. With industrialization and the growth of a technological and

urbanized society, family structures and functions, have experienced great change. The family, at least for adolescents, may no longer be the major socializing influence. That responsibility is certainly shared nowadays with other societal institutions, with the peer groups playing a significant role. One important way family function has changed is with respect to preparing youth for work:

Not only are young people economically burdensome within the family, but the family itself is often a burden on the child, for while the family may provide the young with psychological and moral supports, it increasingly is unable to provide them with firm direction toward entry into the job market. Given the highly specialized nature of many occupations in our society, fathers often have only a narrow range of skills to pass on to their sons. Further, even if the son or daughter desired to follow the occupation of the parents, it would be necessary to obtain formal certification through a diploma, degree or license. (Panel on Youth, 1973, p. 2-1-1)

We may not be able, in the flux of the social scene, to specify what responsibility the family ought to have in preparing youth for adulthood. We can, however, explore what has happened to youth, try to find the causes traceable to family influence, and study alternative and interacting roles that the family might beneficially perform.

Some fundamental questions for research are: Can the family continue to perform the major socializing function for the young that it has in the past? In what ways has this function changed? How can traditional roles be made more effective? What is the effect on young people of changes in family functions and the consequent reduced amount of time spent in the company of parents, siblings and other family members? To what extent can and should other institutions pass on the information skills and values that were once received from long association with the nuclear and extended family? How do various agents interact to effect the socialization of youth? These are basic questions which will require consideration in

any planning of research focused on the influence of the family on the maturation of the young.

The study of the family has been made a focus of interest and concern by the Interagency Panel on Early Childhood Research and Development (Harrell, et al., 1973). The following research areas have been taken from the Panel's statement entitled: The Family: Research Considerations and Concerns. The questions listed were selected as representing areas of significance to those involved in research on adolescence (from Tables I, II, III, pp. 5-13):

- Investigations to determine the various family structures that exist in the United States; frequency; effects on parents (adults) and children
- Study of decision-making processes in families
- Experimental studies which indicate how parents learn to act as parents
- Studies of values in families concerning sex education
- Results of the impact of increased geographical mobility on families
- Effect of the family/home on the child's learning, lifestyle, and future educational achievement
- Effects of varying degrees of involvement of children in family activities upon the value structure of adolescents
- Research on the adjustment potential of the family; the kinds of changes...the family is capable of making and how these skills can be acquired
- Investigation of family attitudes and practices regarding ...handicapping conditions in children
- Investigation of the knowledge, attitudes, and practices of families in regard to nutrition
- Investigations of the environmental and sociocultural factors impinging upon families (e.g., schools, hospitals, type of housing, geographical region, cultural group norms, etc.) and their relationship to child-rearing practices, family roles and functioning, etc.

- Determination of the influence of the role of the school in the community in which the family is a part; i.e., how do school programs (e.g., adult education) affect the family?
- Studies to determine how we can effectively reach adolescents in delivering health services and/or educate them in good health practices
- Exploration of areas in which the family may be legally supplanted, e.g., mechanisms for supplying children with homes away from home; mechanisms for maintaining as many primary ties as possible, especially those that might keep children in their old neighborhoods
- Research on the impact of media and dissemination of various types of information upon families
- Determination of how parent behaviors are learned; how parents structure and amend their environment when they rear children; how to build in intervention that will help them learn what we think is important to child development

In addition to the above, the role of training in the socialization of youth, to prepare them to assume later family and/or marriage roles, is especially important. The problems of intimacy with the opposite sex, the proper roles of wives and husbands vis a vis each other and as parents, the acquisition of parenting skills as part of the preparation for adulthood are all timely, if not urgent, and in need of further study. A report to "those concerned with school-age parents" states that young women leaving high school are in no way prepared for the mothering role. "None of us who have passed through our educational system as it now stands is prepared to be a mother" (Jenstrom, 1973). The same can be said for men and fathering skills. An area closely related to preparing youth for marriage and family roles is that of sex role training and the differential socialization of boys and girls. With the increased interest in new roles for wives and husbands, study in these areas can contribute important knowledge. More broadly, we need experimentation to determine effective ways of preparing youth for family life and parenting.

We have been concerned primarily in this discussion with the influence of the family on preparing the young for adult roles and activities and have mentioned some of the areas of research crucial to understanding the family and its impact on the adolescent in his transition to adulthood. It is apparent, however, that the family is, both for the younger child and the adolescent, a primary influence on physical, cognitive and social-emotional growth and well-being as well. For example, to mention an area of special concern to this report, it is during adolescence that young persons need to develop emotional independence from the family and what Hill calls "instrumental independence" or autonomy, which involves freedom from parental dominance in decision-making (Hill, 1973, p. 31). He believes we need research to study the conceptual issues involved. For example, is autonomy to be conceived as a set of related overt behaviors? If so, what are they? Or is autonomy to be conceived of primarily as a phenomenon of consciousness? If so, what is the relation of this phenomenon to overt behavior, i.e., how are the internal and external characteristics of autonomy related? (Hill, 1973, p. 36). Other examples could be given but these will serve to illustrate the kind of questions focused on the effect of the family on growth and development. Leaving the family, we will turn our attention now to other institutions of socialization for adulthood.

Influence of the School. Assuming that the age segregation which gave birth to the youth culture described above is at the root of many problems of the young today, what can be done to put people of all ages in touch with each other and give youth a participatory role in society? The school increasingly has become society's primary means of preparing youth for adulthood. Since the age of industrialization this has, in effect, meant keeping children in school for longer and longer periods of time, as the labor of children became unnecessary for society's welfare. The resultant prolongation

of social childhood by the schools and the exclusion of the young from participation in adult pursuits has helped create the troublesome segregation and alienation of youth. Insofar as our schooling system is responsible, therefore, changing the schools is seen as a promising way for changing basic relationships between children and adults and reducing the "generation gap."

As a result of an ever-increasing focus on educational change as a necessary prerequisite for providing more relevant education, there have been planned, or published, or made ready for publication in recent months a number of studies dealing with the topic of educational change. Those which were available have been used in this report. One, the report of the Panel on Youth of the President's Science Advisory Committee contains a succinct summary of the kind of change schools are being asked to make.

School is a certain kind of environment: individualistic, oriented toward cognitive achievement, imposing dependence on and withholding authority and responsibility from those in the role of students. So long as school was short and merely a supplement to the main activities of growing up, this mattered little. But school has expanded to fill the time that other activities once occupied, without substituting for them.

Nevertheless, as these activities outside the school dwindled, society's prescription for youth has been merely more of what was prescribed for them as children: more school. It appears reasonable now, however, to look a little more carefully at the task of becoming adult, to ask not the quantitative question, "How much more schooling?" but the qualitative one, "What are appropriate environments in which youth can best grow into adults?" It appears reasonable now, not merely to design new high schools and colleges, but to design environments that allow youth to be more than students. That these environments will include schooling does not lessen the difference of this task from that of creating more schooling. It is the task, no more, no less, of creating the opportunities for youth to become adults in all ways, not merely intellectual ones.

This task does not imply the simple minded solution of "doing away with schools", nor does it suggest ignoring youth's need for education. It implies rather a recognition that school is not identical to education, and that our proper goal is the creation of rich and rewarding educational environments for youth. (Report of the Panel on Youth of the President's Science Advisory Committee, 1973, Foreword)

The paramount concern in education, which affects research, is that calling for a change in the functions of schools to make them more responsive to the needs of youth. The fundamental relationship fostered by schools that many young people (and others) want changed is that which involves the traditional dominance-submission relation between teacher and student. What is considered more realistic in terms of societal conditions today and especially for older students is a partnership between teacher and student, in which each participates in a mutual enterprise and for which each shares responsibility (Hallstrom and Banda, 1972). Schools are being asked to do different, if not more things. While they have been expected to prepare young people for the responsibilities of adult living, the methods used allowed relatively little actual practice of adult living skills. The stated or assumed objectives generally did not match the actual result: keeping youth in school and out of the real adult world for as long as possible. To become self-sufficient in a complicated, urbanized, fast-changing society students had to look for ways outside the school.

What should be the objectives of schools? Those who wish schooling to be more relevant to life would say the objectives of schools should be to provide activities which make youth more responsible for their own activities, welfare and goals, more responsible for the welfare of others, and more skilled in cooperative efforts. A review and synthesis of presently existing goal statements of schools, professional groups and other study groups and the publishing of sub-objectives for different approaches to schooling would be a useful research undertaking. It would be especially helpful to students and

parents using a voucher system for the selection of schools to attend, for example. The translation of goals for students into instructional objectives that can be measured is a primary requisite for research on school change. Objectives "represent the criteria by which to assess the present system and the proposed alternatives." (Panel on Youth, 1973, p. 1-4)

Measurement of the kinds of objectives we are talking about, however, is not a simple matter. No battery of measures presently exists for assessing the acquisition of social and personal characteristics such as "sense of responsibility," "willingness to cooperate," "ability to enjoy leisure time," and so forth. It is believed, however, that such non-cognitive measures can be developed, and must be:

One important deterrent to incorporating these broader objectives into society's responsibilities toward its youth is the relative absence of measurement. Most of the required measures are performance measures, and just like the physical performance measures used in the armed forces or task performance measures used in occupations or in youth organizations, they can be developed. For other objectives, such as those involving responsibilities for others, the best criterion for meeting the objectives may turn out to be the time spent in the activity. It may also be necessary to develop quite different kinds of measures for capabilities developed in experiential learning and those developed in non-experiential learning (primarily classroom learning). (Panel on Youth, 1973, pp. 4-9, 4-10)

To ask schools to change their objectives requires a change in the structure of present educational institutions. If youth are to become self-sufficient they must be allowed to participate in managing their own and institutional affairs. In schools, this may mean assuming roles in addition to that of the student alone, by becoming a staff participant on an equal basis with the adult staff. Students may assist in the governance of schools in collaboration with adults, for example, or act as teacher, student or counselor. Models need to be developed and tested which assign to schools functions different from those of the traditional academic and cognitively oriented school.

The learning of skills through direct experience in situations similar to those in which they will be used is called experiential learning. The use of experiential learning is favored by many educational spokesmen and researchers. They believe that to learn the skills of adult living, students must be involved in the direct practice of various aspects of adult roles (Konopka, 1973).

In addition to the "doing" skills, there is evidence to indicate that "thinking" skills also are learned by direct practice. Schools generally assume that students can think clearly at the level of formal operations but this is not true for all. In fact, some individuals may never achieve this level of thinking. Research evidence has indicated, however, that the levels of psychological maturity can increase as a result of interactive practicum discussions, for example (Konopka, 1973). More research for testing the ideas of experiential learning is needed so that conclusions can be based on evidence.

In addition, it is recommended that high priority be given to the study of "programs which educate teachers and other youth workers to genuinely respect and work effectively with adolescents from various backgrounds" and that pluralistic learning environments be staffed by "adults from a variety of backgrounds" (Konopka, 1973, p. 27).

A number of leading thinkers in the educational world believe that schools perhaps cannot and should not be expected to do all the educating of our children and young people. Alternatives to schools as learning situations are recommended which range from complements to the school as we know it to complete substitutes. The recommendations made by the Panel on Youth, for alternative environments to assist youth in making the transition to adulthood, include the following (Panel on Youth, 1973, pp. S-13 to S-16):

1. Change in School Structure

The first recommendations concern modifications of the high school, in some cases supporting existing innovations in schools, and in others proposing new directions. Two of these, closely related, are the development of more specialized schools, as distinct from current comprehensive ones, and a reduction in size of high schools. A pattern of simultaneous attendance at more than one specialized school makes possible both the benefits of specialized schools and the benefits of small size. A third proposal recommends the introduction of roles other than student role for a young person in a school, particularly that of tutoring or teaching of younger children. Finally, it is proposed that some schools experiment with acting as agent for youth in placing him in fruitful settings outside the school (not only for work experience, but through museums and other cultural institutions, for cultural enrichment as well) concurrent with his continued schooling.

2. Alternation of School and Work

The second proposal is a general encouragement for those innovations which involve a mixture of part-time work and part-time school, all the way from a daily cycle to a trimester cycle. Where those experiments are already in progress, the report calls for a careful evaluation of the results on the objectives discussed in Part 1, and not only the narrow objectives of cognitive skills and job skills.

3. Work Organizations that Incorporate Youth

The third proposal recommends pilot programs involving a much more intimate intermixture of school and work, carried out at the workplace. The proposal is to incorporate youth into work organizations with a portion of their time reserved for formal instruction. The change envisioned would mean that persons of all ages in the work organization would engage in mixture of roles including learning, teaching, and work.

4. Youth Commitments and Youth Organizations

The fourth set of proposals involves youth communities and youth organizations. Youth organizations in the United States and many other countries have long addressed some of the non-academic objectives discussed in Part 1, and the proposal is designed to encourage their continuation and growth without engaging in administrative control. The proposal is

for the federal government to serve as a paying customer for certain public services carried out by youth organizations, thus strengthening both their financial base and their direction and purpose.

It is proposed that the principles of residential youth communities, in which youth provide most of the services, have most of the authority, and carry most of the responsibility, be experimentally extended to non-residential settings. A youth community can provide early assumption of responsibility, and thus fulfill certain of the objectives that are necessary for the transition to adulthood. Experimentation with non-residential communities would increase our information about their benefits and liabilities for the youth within them.

5. Protection vs. Opportunity for Youth

A fifth area of proposals concerns the dilemma of protection vs. opportunity for youth. We feel that current laws and administrative procedures are overbalanced in the direction of protection, and propose two changes toward greater opportunity. The first is an extensive review of the administrative procedures and regulations designed to protect workers under the age of 18. These procedures currently act as a strong disincentive to some employers to hire youth under 18. Second, we propose broad experimentation with a dual minimum wage, lower for younger workers, before any general increase in the minimum wage is legislated. A high minimum wage can act as a serious disincentive to hiring inexperienced persons, that is, the young.

6. Vouchers to be Employed by Youth

A sixth proposed change is the introduction, on a pilot basis, of broadly-usable educational vouchers from age 16, equivalent in value to the average cost of four years of college. Such vouchers would be usable for a wide range of skill training as well as higher education. The existence of such vouchers would put the decision for further training in the hands of youth who will themselves experience the consequences, and would likely encourage wiser management of one's affairs than do current institutions.

7. Opportunities for Public Service

Next, the report proposes a much wider range of opportunity for public service, through Federally-funded public service programs. Current programs, some of which are strikingly successful, should be modified in these ways:

- 1) increase in numbers far beyond their miniscule quantity now, which is less than 20,000 from an age-cohort of about 4,000,000;
- 2) availability from age 16, rather than from age 18, as is true with most current programs;
- 3) availability for commitments of one year, rather than two, which is the current standard.

8. Research on Ongoing Processes

Finally, a number of questions about effects of different environments on youth can be answered by carefully-designed research on existing institutions.

The Panel on Youth recommends that pilot studies of these alternatives be conducted in order to obtain solid research information upon which to base policy decisions. According to the Panel, prior experience with proposed social changes should be gained "through explicit experimental design and systematic collection of data rather than in traditional casual ways." This is good advice for all the recommendations; to determine whether, in fact, they do bring about the intended better relationship between young and old and prepare youth for defined adult roles.

Before undertaking massive research efforts related to school change, it may be wise to document the evidence that suggests that schools do, in fact, have primary responsibility for student disinterest, and in what ways they are responsible. Research to study the elements of schools that have fostered lack of communication, hostility and alienation of youth may be necessary concomitant of research on school change, if not a prerequisite. We need to know also what elements of society and the population other than the schools and school people are involved and how these relate to recommendations for school change, i.e., how do family, work and other community influences interact with school experience? Research must attempt to identify causes first, then develop appropriate solutions and evaluate the effect. At the same time, it must be remembered that a change in one major institution will bring about changes in other institutions, and that planning for research and school change needs to take this reciprocal relationship into account. A good illustration is the change in school

arrangements that would be necessary following a change in the present law which makes school attendance compulsory. Experimentation with alternatives to compulsory school attendance could yield useful information having applicability to changes in the law.

Various combinations of school and work experience have been mentioned above as a means of providing adolescents with the opportunity to learn through involvement in real life situations. One of these variations, i.e., career education, has been the focus of a great deal of thinking and activity at Federal and local levels.

First introduced by the U.S. Commissioner of Education at a meeting of school principals in 1971, the idea of career education has given rise to enthusiasm (and opposition) among school practitioners and researchers. Some observers believe the program has the potential for dealing with many of the shortcomings of present education in preparing youth for the expectations and responsibilities of adulthood. Its major contribution may be its potential for initiating the institutional change which we have indicated is necessary if the schools are to meet new objectives in the education of youth. Education Secretary Sidney Marland stated that the adoption of career education would represent "a totally new social form" for education in this country and that it would "affect the lives of all our children" (Address, 1973).

The National Institute of Education, a major agency conducting educational research in the Department of Health, Education and Welfare, is presently involved in developing and testing four models of career education. Serving a broad population in four kinds of settings, the four models are: (1) the home/community based model, intended primarily to serve out-of-school adults and adolescents; (2) the school-based model, which fuses career education objectives into comprehensive programs for students in schools, from kindergarten to post-secondary levels; (3) the employer-based model, which provides an option to teenage students who wish to participate

in programs taking place outside the traditional school; and (4) the rural/residential model, planned to provide a range of services, including health, welfare and education, to entire families in a residential community center (NIE, 1973). The ultimate goal for each of these models is to provide for individual growth in academic, vocational, technical, social, political, aesthetic and personal development areas. Each model has been established to explore its feasibility and best application through a process of research, development, demonstration and evaluation. When they have been fully tested and validated, these models will be made available for application by schools and other practitioners in any way that they wish.

The employer-based model as presently conceived provides the greatest amount of participation and involvement of the student in direct work experience and planning of his own learning program. Some of the research questions being explored by the employer-based models are the following: (1) Can an employer-based career education model be operationalized as a feasible, effective and efficient alternative to existing secondary programs? (2) How much and what segments of the total educational experience can be effectively undertaken by employers? (3) For what types of students is an employer-based career education model an effective and efficient alternative? (4) Does the program improve student learning in academic areas? (5) Does the program enhance the student's ability to make informed career choices, to obtain a job, and/or to continue further education?

In discussing research questions that are particularly pertinent for adolescents we have concentrated on issues relating to the rejection of schools by the young and ways of making learning more relevant to preparation for life. The need for research on changes in school structure to give students a participatory role in preparing for adult roles has been discussed, and the potential career education as one example requiring institutional change has been explored.

There are many other structures, for example "open learning systems," that need to be examined. In addition, research related to instructional methods, curriculum development, student-teacher relationships, teacher preparation, management and administration, and relationships with the community are all component areas and have been and are being studied, from both basic and applied research orientations.

Research in each of these broad areas will have relevance for adolescent development. To suggest what some of these areas might be, we will present briefly the findings of a study sponsored by the President's Commission on School Finance which dealt with the effectiveness of schooling across all these areas (Averch, et al., 1971).

The objective of the study was "to assess the current state of knowledge regarding the determinants of educational effectiveness." Each research effort covered was critically reviewed to determine its internal validity and the credibility of its results (inter-study consistency). The report states the study is "not a classical survey of research listing findings without much evaluation of results; rather it is our answer to the question, What does the research tell us about educational effectiveness?" (Averch, et al., 1971).

After outlining the limitations of available research (to be discussed below), the report presented its conclusions. The major conclusion was that "research has found nothing that consistently and unambiguously makes a difference in student outcomes" (Averch, et al., 1971, p. xi):

The literature contains numerous examples of educational practices that do seem to have significantly affected student outcomes. The problem is that other studies, similar in approach and method, find the same educational practice to be ineffective; and we have no clear idea of why this discrepancy exists. In short, research has not discovered any educational practice (or set of practices) that offers a high probability of success over time and place. (Averch, et al., 1971, p. xi)

"Practices" includes a broad range of interventions: school resources, processes, organizations, structure, and methods, each aimed at a variety of objectives. Lack of knowledge,

therefore, in each of these areas is a major obstacle to achieving change and improvement in an educational system.

Four additional propositions describe the current status of educational research (Averch, et al., 1971):

Proposition 2: Research suggests that the larger the school system, the less likely it is to display innovation, responsiveness, and adaptation and the more likely it is to depend upon exogenous shocks to the system. (p. x.)

Proposition 3: Research tentatively suggests that improvement in student outcomes, cognitive and non-cognitive, may require sweeping changes in the organization, structure, and conduct of educational experience. (p. xii.)

Proposition 4: Increasing expenditures on traditional educational practices is not likely to improve educational outcomes substantially. (p. xii.)

Proposition 5: There seem to be opportunities for significant redirections and in some cases reductions in educational expenditures without deterioration in educational outcomes. (p. xiii.)

With regard to the last statement, one of the major problems is the absence of cost considerations. "The research now available does not indicate which of the apparently equally effective variants is least expensive" (Averch, et al., 1971, p. xiii).

From the review of educational research, the study identified some specific knowledge gaps and suggested that future research could be profitably directed to the following major issues:

First, research must examine the extent to which, and under what conditions, learning takes place outside the school. Second, the concept of interactions must be more deeply investigated. Third, the vastly different forms of education that have been suggested as alternatives to the present system should be investigated. Fourth, we must begin to examine educational outcomes over time and on many dimensions. Fifth, the approaches must be merged. Each offers insights not available to those who work in the others. Each has blind spots. There have been far too few attempts to use the strengths of one approach to overcome the weaknesses of another. And sixth, analyses must recognize the cost implications of their results. (Averch, et al., 1971, pp. xii-xiv)

These are issues that must be regarded in the planning of research on learning, for all age groups, including adolescents.

Role of Work. The roles of the family and the school in preparing youth for adulthood have been described. Attention now turns to work as a basic institution for the socializing of youth. The report Work in America asserts that work plays a pervasive role in the psychological, social and economic aspects of each person's life. "As such it influences, and is influenced by, other basic institutions--family, community (particularly as a political entity), and schools--as well as peripheral institutions" (Work in America, 1972, p. 2). Participation in meaningful work, from which they have been excluded for longer and longer periods, specifically in the formation of self-esteem, identity, and a sense of order, i.e., those functions having to do with the personal meaning of work apart from its economic and social functions (Work in America, 1972).

The career education models emphasize the close relationship between school and work, and the concept of career education, while certainly requiring a change in our educational institutions, also suggests needed change in attitudes about the purpose of work and in the economic institutions that provide it. The research on the employer-based career education model, for example, is expected to provide the following information:

When fully developed, this model will provide comprehensive data on the benefits and limitations of utilizing educational opportunities within economic situations. Analyses will be given of the readiness of employers to involve themselves in comprehensive education programs, the necessity and/or potential of various incentives to employers, the learning potential of specific economic institutions.... (NIE, 1973, p. 8)

The Manpower Report of the President, in relating the high rate of unemployment among teenage young people ages 16-19 (four or five times that for adults over age 25), points out that researchers investigating the causes of delinquency "have found substantial evidence of a relationship between criminal behavior

and economic conditions, including unemployment" (Department of Labor, 1972, p. 91). As a solution to the problems of these "discouraged and dissatisfied" young people the report recommends a change in the role schools play in preparing youth for the world of work and a lifetime career. The report recommends the implementation of career education, particularly for young people not bound for college, and postulates that "effecting a smooth transition from school to work for the nation's youth calls for restructuring the process and the institutions involved in it" (Department of Labor, 1972, p. 99).

The report, Work in America, prepared by a special Health, Education and Welfare Task Force, spells out the kinds of changes that will be needed in the work place and suggests that, with regard to young people, the reason for change is the same one that is the cause of called-for changes in the schools. Namely, this is the demand for youth for involvement and participation in meaningful ways in the pursuit of life's goals. The report is quoted at length for the insight it gives into the reasons for and the nature of recommended change in the employment structure (Work in America, 1972, pp. 50-51):

The young worker is in revolt not against work but against the authoritarian system developed by industrial engineers who felt that "the worker was stupid, overly emotional. . . insecure and afraid of responsibility." This viewpoint is summed up in Frederick Taylor's classic dictum to the worker:

'For success, then, let me give one simple piece of advice beyond all others. Every day, year in and year out, each man should ask himself over and over again, two questions. First, "What is the name of the man I am now working for?" and having answered this definitely, then, "What does this man want me to do, right now?"'

The simple authoritarianism in this statement would appear ludicrous to the young worker who is not the uneducated and irresponsible person on whom Taylor's system was premised. Yet, many in industry continue to support a system of motivation that was created in an era when people were willing to be motivated by the stick. As an

alternative to this approach, many personnel managers have offered the carrot as a motivator, only to find that young people also fail to respond to this approach.

From our reading of what youth wants, it appears that under current policies, employers may not be able to motivate young workers at all. Instead, employers must create conditions in which the worker can motivate himself. This concept is not as strange as it seems. From biographies of artists, athletes, and successful businessmen, one finds invariably that these people set goals for themselves. The most rewarding race is probably one that one runs against oneself. Young people seem to realize this. They talk less positively than do their elders about competition with others. But they do talk about self actualization and other "private" values. Yankelovich found that 40% of students--an increasing percentage--do not believe that "competition encourages excellence," and 80% would welcome more emphasis in the society on self-expression.

Compared to previous generations, the young person of today wants to measure his improvement against a standard he sets for himself. (Clearly, there is much more inner-direction than David Riesman would have predicted two decades ago.) The problem with the way work is organized today is that it will not allow the worker to realize his own goals. Because of the legacy of Taylorism, organizations set a fixed standard for the worker, but they often do not tell him clearly why that standard was set or how it was set. More often than not, the standard is inappropriate for the worker. And, in a strange contradiction to the philosophy of efficient management, the organization seldom gives the worker the wherewithal to achieve the standard. It is as if the runner did not know where the finish line was; the rules make it a race that no worker can win.

It is problematic whether the intolerance among young workers of such poor management signals temporary or enduring changes in the work ethic. More important is how management and society will reckon with the new emphasis that the workplace should lose its authoritarian aura and become a setting for satisfying and self-actualizing activity.

The kinds of research recommended by the Work in America Task Force to solve the dual needs of personal satisfaction and work productivity would require an evolvment of an "experimenting society"--one willing to try new things "in terms of

trial and careful evaluation under circumstances that we can afford and measure." The Task Force differentiates between academic research and social experimentation. Within the former would fall such activities as research demonstrations to address technical problems involved in redesigning some of the worst jobs in the economy, e.g., those on the assembly line; study of diagnostic procedures to identify sources of stress and satisfaction in the work situation and in the person; and broadening of research to include specific groups, i.e., blue collar workers, women, blacks, and Mexican-Americans (Work in America, 1972).

The redesign of work, which requires innovation, trial and evaluation, and the participation of workers, managers, and unions, calls for operational or action research. Any change that makes work more satisfying in the sense described in the quote above will make it more attractive to adolescents. The crucial thing is that forms of work not be restricted to adults, but include young people also.

An important area for experimentation is that called "participative management." Participative management does not mean participation through representatives nor serving on boards of directors (Work in America, 1972).

Participative management means. . . that workers are enabled to control the aspects of work intimately affecting their lives. It permits the worker to achieve and maintain a sense of personal worth and importance, to grow, to motivate himself, and to receive recognition and approval for what he does. It gives the worker a meaningful voice in decisions in one place where the effects of his voice can be immediately experienced. In a broader sense, it resolves a contradiction in our Nation--between Democracy in society and authoritarianism in the workplace. (Work in America, 1972, p. 104)

Some areas for research include the participation of workers in making decisions about:

- Their own production methods.
- The internal distribution of tasks.
- Questions of recruitment.
- Questions regarding internal leadership.
- What additional tasks to take on.
- When they will work.

Other kinds of work forms recommended for study include autonomous work groups, job mobility, rewards for learning, and supportive physical layout (Work in America, 1972).

As the report points out, this kind of involvement to make work more meaningful is also the kind that will make life more meaningful, for young and old. Movement in the direction of providing for change in social institutions and bringing young people into society's mainstream is the kind of change that will help to abolish youth alienation and its attendant social and economic problems.

The following list of research recommendations relating to specific problems and issues of work experience for young people is taken from a report prepared for the Interagency Panel for Research and Development on Adolescence. This report also discusses major research issues in adolescence, recent research efforts, and Federal vocational, career education and manpower training programs (Searcy, 1973, pp. 112-116):

1. There are some areas in need of consideration which may be thought of as serving a facilitative function with regard to the employment of youth or the conduct of related research. One of these facilitative activities is to take the necessary steps to be sure jobs are available for youth--for those who want to participate in employment. Preparing students psychologically and technically for jobs that do not exist obviously can have disastrous consequences. Therefore, a primary research need is the study of local and national job needs and the development of a job creation strategy to meet those needs--perhaps with leadership provided at the Federal level and with appropriate financial support made available for local investigations.

2. Additional studies need to be conducted related to the efficacy and effects of changing some of the present legislation which works to restrict the employment of young people below age sixteen in some jobs. A frequent proposal is to experiment with a dual minimum wage, with the idea that a lower one for younger, inexperienced workers will make it more likely that employers will be willing to hire them.

3. Local investigations should encourage schools, employers, unions, and community agencies (as well as parents and students) to work together to determine local job needs and to develop training courses on a cooperative basis to meet those needs, courses which provide experience in actual work situations. Such activities would help establish presently missing linkages and lines of communication among the community groups which must work together to provide effective work-study experiences for young people. Research should be designed to develop appropriate models for communication and cooperation.

4. Organizational structures for administering a variety of work experience programs need investigation. Multiple models need to be designed and evaluated--those involving traditional institutions using updated methods (the school systems and established community agencies), and new agencies and sponsors working outside the existing state and local vocational education system. The evaluations should be designed to determine what kinds of structures are best suited for particular purposes and for individuals with particular characteristics.

5. Research on each of the different kinds of work experience programs--on work-study, cooperative education, volunteer work, career education programs--and on any new structures should include studies of such programs' elements as planning methods, different ways of developing and installing curricula, analysis of counseling methods and needs, the development of job placement programs, and provisions for follow-up of terminated students. Both cost-benefit studies and studies to identify casual relationships should be undertaken.

6. It is believed that the research efforts in the volunteer work area particularly should be expanded beyond the present research emphasis on program evaluation. Important data already gathered on program and enrollee characteristics could be the base for examining such questions as the effects of nonpaid (or low pay) volunteer work as compared with other kinds of work experience and for what kinds of individuals it is most beneficial. Also, the question of how volunteer work may fit into the overall work experience picture is a significant one.

7. In order to evaluate work experience programs, it is recommended that in addition to cost-benefit studies, Federal agencies sponsor process studies of the political and organizational dynamics of the implementation of new programs. Information is needed on the effects of agency linkages, bureaucratic structures and management procedures on the success or failure of such programs: This recommendation includes school and community processes as well as Federal agency functioning.

8. Some Federal monies for research should go directly to local agencies and schools, rather than having state agencies control all the spending. It is hoped this will result in greater willingness to experiment with innovative organizational and instructional methods and make training more responsive to actual local job needs.

9. Further study is needed on ways of matching the individual to the kind and amount of work experience or instruction best suited to his needs, interests, and abilities. The degree of individualization which is both effective and practicable needs examination. Again, the costs versus the benefits need to be determined.

10. Increased effort is needed to develop effective techniques for career guidance counselors in schools, colleges, manpower agencies and elsewhere to advise students how to prepare for jobs and careers, with equal consideration given to vocational preparation and academic learning, according to the needs of the individual.

11. In the matter of curriculum development, it is felt to be extremely important that the social responsibility which is inherent in many occupations be emphasized in instruction. For example, knowledge of the adverse effect on the environment of some occupations and the responsibility of each person for these effects should be included in vocational education and job training.

12. In addition to measuring the effects on individuals of work experience, in cognitive and noncognitive areas, studies are needed to measure the effects of work experience programs on the institutions involved--on schools, communities and community groups, employers, unions, and the labor force. The need to provide ways for students to move easily between school, work, and community settings and the development of a system to provide credit for learning in each of these environments is an example of such research. Another specific area of investigation is to experiment with increased flexibility in work scheduling, with regard to the number and arrangement of hours and days worked, and the time that might be made available by employers for study, community service, and leisure.

Family, school, work--these are the major influences used in society to prepare youth for adulthood. Each has been discussed in this section and some major issues pertaining to each reviewed. A final issue to consider is the importance of encouraging young people to participate in life experiences for the value they have now, today, as well as emphasizing the need to prepare for the future. This is a desire expressed frequently by the young and one which deserves serious consideration by research and policy planners as they consider programs for the future. To conclude, there are many additional research issues and questions that will be considered important by other individuals. We have attempted to identify and describe here those that appeared to be of outstanding significance.

General Principles and Procedures for Research

This section will review some approaches to research which have application to or affect all research undertakings. The following will be discussed: the global or ecological approach, research to benefit all youth, research on methodology, and research planning and dissemination.

The Global Approach. This approach to research is one which attempts to place all findings in a context of interaction with other elements. Several examples have appeared in the above discussions: the reciprocal influence of components of the growth process, the need for comprehensive health care programs to treat related health problems, the interactive effects of institutional change. The global view is the same as an ecological approach which takes into account the effect of one variable interacting with one or several other variables. In research, such an approach is necessary in order to arrive at meaningful conclusions; research findings must be integrated to give a true picture of results and effects.

Hill, in describing some attributes of an ecological theory of human development that could assist the study of adolescence, elucidates the meaning of the global approach:

The discussion above of perspectives on adolescence provides a recipe for some of the attributes of such a theory. First, it should be a conceptual framework which applies to the life cycle as a whole since only a consistent conceptual framework applied to each period will reveal the extent and the nature of continuities and discontinuities in development. Second, the theory should provide concepts useful in describing variations in environments as well as variations in persons. Only then can the universal be disentangled from the particular. Third, the theory should be based upon thoroughgoing interactionist kinds of assumptions about development rather than a strictly "inner" or "outer" bias. By this is meant that developmental change is always likely to be a matter of genetically-programmed and environmental events acting together in some way. Fourth, behavior at any given point in space and time should be considered a function of personal and situational variables. Using some shorthand labels, one might say that the attributes of the desired theory are that it be: life-span, contextuals, interactionist, and life-space. On the whole, a theory of this kind can be called an ecological theory since it is concerned with the interrelations between organism and environment (person and situation) throughout the life cycle. (Hill, 1973, pp. 11-12)

An ecological approach to the study of the family is beginning to emerge in the research of various Federal agencies. This calls for the study of children "in the context of the family" and the study of the family "in the context of its internal functioning and the external institutions which impinge upon it." Many of the questions from the Family paper listed in the previous section represent this approach (Harrell, et al., 1973).

Ecological studies can delineate the impact of interactive influences on the physical, cognitive and social-emotional development of children. They can also provide knowledge upon which to base public social policy. An important variation of ecological research is the study of the combined and/or comparative effects of various social intervention programs. In the income maintenance area, for example, research is needed to study alternative models including those for direct income support, arrangements for dependents' support, health care support,

and parent training facilities. At the same time, income maintenance programs must be studied within the context of societal goals and compared with other social programs.

Important questions for research requiring an ecological approach are implicit in conclusions of the Work in America Task Force which called for changes in work policies, laws, and structures in this country. The interrelationship between work and family stability (for low-income families) is described:

In summary, family and marital stability may be functions of many things, but economic sufficiency and the part played by the man in providing it is surely one of them. Piecing together the findings from 46 studies relating work experience and family life, Frank Furstenberg concludes that "economic uncertainty brought on by unemployment and marginal employment is a principal reason why family relations deteriorate."

Thus, the key to reducing familial dependency on the government lies in the opportunity for the central provider to work full-time at a living wage. The provision of this opportunity should be the first goal of public policy. (Work in America, 1972, p. 184)

The Task Force recommends the substitution of work programs, based on structural change in the organization of work, for income maintenance programs. The experimentation upon which to base such policy changes must be planned to provide evidence about the interactive effects of a variety of elements. The hypothesized effect on the family of new ways to work must be investigated and the implications for education subjected to further study. Complementary changes in work and in education and training institutions will be a highly complex and expensive area of investigation, calling for the cooperation of researchers in a variety of disciplines; i.e., the so-called global approach should be applied. But the results would assist in broad social planning and the most cost-effective allocation of resources. Deep-seated changes in social structures of this kind will affect the lives of adolescents and indeed, the possibilities of such effects ought to be included in the design of global research whenever appropriate.

Research to Benefit all Youth. This approach encompasses two related ideas. One is that all youth, not only special minority groups, should be included in the research spectrum, that being a "normal" youth should not be a disadvantage when it comes to receiving the benefits of the expenditure of research dollars.

The other idea is that research, in fact, does need to focus on problems of special groups with special needs. These would include the dropout, the disadvantaged, the poor, the black, the Chicano, the bilingual, the mentally retarded and the physically handicapped adolescent. Obviously those in need cannot be ignored. But policy makers and research planners must be permitted to have all ethnic groups and socio-economic and educational levels fairly represented in research programs. Such programs are necessary in order to take into consideration the entire diversity of the adolescent population.

Hill has indicated that the ignoring of the plurality of youth by society, of the prevalence of the tendency to "homogenize" youth and disguise their diversity, is one of the perspectives which distorts the conception and study of adolescence and also influences social policy development. (See Section 1 above.) It is not unlikely that the "mythical versions" of adolescence that abound in society contribute to the problems of adolescents who are members of different groups and may even create problem groups, such as the school dropout. The following is relevant:

By and large the force for change in the public schools of yesterday was the urgent social need to assimilate the children of immigrants into the mainstream of American life:

For the last century the public school system has been the foundation of American democracy. It has long provided a melting pot to acclimate new groups to the nation's value system. Today, however, Americans of different colors and races challenge this goal and the process by which it

has been achieved. They rightfully seek the incorporation of their own cultural values and heritage into the educational process--an addition which should enrich all students equally. (White House Conference on Youth, 1972)

If one accepts this analysis, the urgent need today is to build schools and school systems which effectively take into account the complexity and diversity of society. The task of teachers is no longer (if it ever was) to produce duplicates of themselves. At least a portion of the task, if school is to be developmentally relevant, is to put students into touch with what the life possibilities are and how the possibilities match the student's own resources. It does not seem likely that this task can be achieved until there is increased recognition of the diversity of those personal resources and unless institutions can be built upon such recognition. (Hill, 1973, p. 7)

Hill suggests that more work be conducted on "the heterogeneity of the settings in which adolescents are found and the diverse impacts these settings have on behavior" (Hill, 1973, p. 8).

It is recommended that national baseline studies be undertaken for the collection of demographic data. Among the data that would be useful is that on various ethnic and racial groups, social classes, males and females, and middle and late adolescent age groups. Information on the availability and status of various health, welfare, and educational programs for adolescents should be included.

Research on Methodology. Better ways of designing and evaluating research itself need to be investigated. Methodological studies to develop better research designs and assessment instruments require more widespread support.

Specifically, research procedures need to be developed which can identify functional relationships between the many variables operating in natural settings and planned intervention programs. The complexity of variables involved in social research of the kind referred to in the above sections makes systematic analysis and evaluation difficult. For this reason, basic research relies heavily on controlled experi-

mental situations which manipulate small numbers of variables. Studies of intervention programs, on the other hand, frequently take the form of evaluations which typically are limited to before and after test measures of program participants and disregard the range of variables affecting these measures. Procedures for analyzing complex situations containing many variables, therefore, must be improved and developed.

One type of approach that needs further study is that which measures the relation of program inputs to specific results (outputs). Studies of causal relationships are necessary so answers to specific questions can be formulated. Being able to link a desirable outcome with its cause makes it possible to replicate successful programs and in this way to capitalize fully on the benefits of research.

Some specific kinds of relevant methodological questions include the following: What research designs or methodologies can include all the factors impinging on the young person to determine sources of impact on his development? Under what arrangements can interdisciplinary research designs and methodologies be developed? How can parents, adolescents and other affected groups be involved in research design?

In addition, the methodology of longitudinal research is a significant area for study. Two years ago a panel of child development researchers deplored the tendency of the Federal government to support relatively short-term and piecemeal research efforts (Sparling and Gallagher, 1971). The report The Provision of Health Care Services to Adolescents in the 1970's, expressing the need differently, also called for funding continuity in these appealing terms:

Of what use is planning, of what use is evaluation, of what use is demonstration of effect and outcome, if there is no evidence that even when the results are in that funding will be assured? and How can anyone who is accountable for his work, for the health, let alone development or even lives of others, attract the people who are competent to give care, give any kind of honest

expectation for those seeking service, or commit local organizations for local dollars or service programs when you live with the tyranny of non-approval of funding on an annual basis? You barely get programs to full capacity when you have to start worrying about terminating them. . . .

The recommendation is thus made that funding be made for a minimum of three year periods, that legislative intent to extend be at a minimum of three year increments and that if there is no intent to extend programs, that the basis for termination based on performance failure be made explicit. (Hallstrom and Banda, 1972, p. 207)

While there is a place for short-term research, particularly for the purpose of developing and demonstrating solutions to pressing and immediate problems, the relative dearth of longitudinally designed research has meant that many important questions have yet to be answered. One reason that long-term research is necessary is that the effects on children over time may be the only reliable way to determine whether influences from the natural environment and from planned programs are beneficial or harmful. The discontinuance of support of productive research programs has sometimes resulted in less benefit from research dollars than might have been realized had a project received continued long-term funding.

The Interagency Panel on Early Childhood Research and Development has made the need for more longitudinal research a focus of concern, and in 1972 issued a position paper recommending that long-term intervention research be considered a priority in future research planning by Federal agencies (Social Research Group, 1972). A support paper prepared for the Panel discusses in detail the methodological problems of longitudinal research. Among the major problems for investigation which were discussed were the following: the attrition of the research sample over long periods of time, the shift in focus that may come when a principal investigator leaves a project, the revision and development of research instruments as years pass, and problems associated with massive data collection and analysis

(Grotberg and Searcy, 1972). In spite of the problems, the benefits of long-term research justify its expansion and warrant support for studies of these and other methodological problems.

The work related to marker variables of the Interagency Panel on Early Childhood Research and Development and the Interagency Panel for Research and Development on Adolescence deals with another problem of methodology (Social Research Group, 1973). The interest of the two Panels in this area arose from the lack of standardized definitions and assessment instruments in research that leads to difficulty, among other things, in comparing different programs and their outcomes. The coordination of research efforts and the synthesis of results also depend to some extent on core sets of definitions and common standards. Therefore the Panels' concern to improve methodology in this area is of interest to all researchers and their work will continue to be reported.

We will conclude the discussion of the need for improvement of research methodology with a statement of additional kinds of methodological and general research problems that may be solved by further study. These problems represent those found in many areas of research. The first three are taken from the report of the President's Commission on School Finance, the section entitled "Limitations of Available Research" (Averch, et al., 1971, pp. ix-x):

1. The data used by researchers are, at best, crude measures of what is really happening. Education is an extremely complex and subtle phenomenon. Researchers in education are plagued by the virtual impossibility of measuring those aspects of education they wish to study. For example, a student's cognitive achievement is typically measured by his score on a standardized achievement test, despite the many serious problems involved in interpreting such scores.
2. Educational outcomes are almost exclusively measured by cognitive achievement. Although no one would deny that non-cognitive outcomes and social outcomes beyond the individual student level are of major importance, research efforts that

focus on these outcomes are sparse and largely inconclusive and offer little guidance with respect to what is effective. In general, then, whenever we refer to "educational outcome" throughout the discussion, we mean the student's cognitive ability as measured by standardized achievement tests.

3. Few studies maintain adequate controls over what actually goes on in the classroom as it relates to achievement. Thus, researchers' data may well be affected by circumstances unrecognized in their analyses. For example, it is not unusual to find a researcher comparing the relative effectiveness of instructional methods A and B. He might train one group of teachers in the use of method A and another in the use of method B, and at some later point, he would measure and compare the cognitive skills of the students who were taught by teachers in the two groups. The validity of the results generated in such a study would, of course, depend, among other things, upon whether the teacher did in fact use methods A or B in their classrooms.
4. With regard to the second recommendation above, a major reason that outcomes are measured by cognitive achievement is, without doubt, the fact that few measures exist (as described in above sections) for the measurement of non-cognitive achievement. A major obstacle to evaluating the effects on adolescents of peers, family, school and work is and will continue to be the absence of adequate measures, particularly in the affective and social-emotional areas. A major effort must be made for the development of assessment instruments as new programs for adolescents are planned (Author's note).
5. The Report of the Joint Commission on the Mental Health of Children recommended that assessment research be made an integral part of all research on model programs or pilot studies. The Report emphasized the need "to redefine demonstration projects as innovative efforts which include evaluation and assessment as a central orientation. . . it is necessary to stress that no demonstration project should be funded without appropriate rigor and relevant assessment techniques." (Justman, 1968)

On the question of measures and evaluation, Charles Gershenson summarizes, in the report of the National Conference on Research in Maternal and Child Health, some of the problems and research needs:

Too many programs are victims of the "law of the instrument" in which the instrument, evaluation, determines the parameters of the program rather than the evaluation assessing the program. For example, by using infant mortality as a criterion for child health one may reduce mortality but not really affect child health. A good example is family planning which decreases infant mortality but makes no further contribution to child health beyond the pregnancy outcome....

A move from theology to philosophy to science entails a move toward measurement. Evaluation is limited by the lack of adequate measures of the significant objectives of health programs. The reluctance to use "soft" measures requiring judgment and the use of the inappropriate "hard" measures has done more harm than good. A high priority of research is the development of more techniques of measurement for the objectives we value highly. (Gershenson, 1973, p. 27)

Measures and objectives are discussed more fully below.

Research Planning and Implementation. The research process may be thought of as a continuous cycle, beginning with the first consideration to initiate a research undertaking, moving to the actual conduct of the research, and ending with the application of findings by researchers or by practitioners. The cycle is completed when information from researchers and the field are fed back into the system to assist the planning of new research. This section deals with the first and the last steps in the research process: planning and implementation.

An important aspect of planning involves the analysis of need and the statement of objectives to meet this need. There is a growing literature on the importance of the statement of objectives in measurable terms for any research or operating program, which it is believed is essential to facilitate the assessment of program success. Indeed, it is believed that without the specification of goals upon which program criteria can be based, it is impossible to evaluate exactly what has been accomplished and hence to judge the merit of any particular program.

The remarks of Freeberg and Reilly with regard to work training programs are applicable to all the programs discussed above that affect adolescents:

The ability to demonstrate the effectiveness of any social program is almost completely a function of the ability to measure intended goals, or objectives, with reasonable accuracy. It is the measurement 'quality' of the variables chosen to define performance standards that ultimately makes it possible to: a) specify the degree of program success, b) feed back information for modifying and improving program components, and c) carry out meaningful research leading to increased understanding of the population served....

For many governmentally funded manpower training programs, aimed at effecting broad social change, statements of program intent have often been highly general and too rarely translated into applicable behavioral objectives--both long and short terms--with defined measurement requirements. Even less attention has been paid to the availability and suitability of outcome variables that would be needed to measure intended goals with reasonable continuity from study to study, or program to program. (Freeberg and Reilly, 1972, p. 1)

These authors note the distinction between what might be called program objectives (the basis for summative evaluations) and recipient objectives (which are related to formative evaluation). In work training programs, for example, the criteria of program success might include the number of enrollees completing courses, success of placing graduates on jobs, and job tenure of those placed.

Recipient objectives have to do with evidence of change in specific characteristics or behavior of those who are the subjects or objects of an intervention. Such changes may include the learning of specific academic or manual skills, increased social skill, better health, or the optimization of growth. Each of these goals must be broken down and operationally stated so that they can be measured, e.g., "students will be able to read the following vocabulary" and "babies on this diet will contract fewer childhood diseases" are two specific recipient objectives. In order to

know how to make interventions work, one must be able to link specific results with specific inputs, and the statement of recipient objectives, as described, helps make this possible.

Among the implications for research that objective evaluation can have are the following: (1) the importance of development of measures of objectives based on empirical evidence is reemphasized; (2) objective evaluation helps to identify research areas needing additional study; and (3) it suggests that research efforts themselves should be related to specific operational objectives. With regard to the latter, for example, the statement of behavioral objectives for health and welfare programs and for the institutions of socialization--family, school, work--would assist Federal agencies in developing statements of objectives for research programs. It would assist in the designation of research priorities within the boundaries of the legislated missions of the agencies. In addition, the statement of operational objectives would provide policy and program planners with a valid means of assessing achievement and determining the cost-effectiveness of alternative programs.

Both long-range and short-range goals need to be specified. One way to divide the task is to think of long-range goals as broad, superordinate guidelines and short-range goals as subsets (to meet alternative needs) of intermediate enabling objectives. The former could be provided by a national conference of experts or a government task force. (The great need here is the integration of new and possibly existing statements of objectives, to cover the span of related disciplines and programs.) For the latter, a priority research need is a multi-funded effort to develop hierarchies of operational objectives for adolescent development that can be used as a blueprint for the guidance of research planning. In turn, objectives for research programs and projects should be described in measurable terms whenever possible.

Planning based on outlines and hierarchies of measurable objectives is a necessity for the coordination of research across agencies. The Interagency Panel on Early Childhood Research and Development has already made significant progress in this direction. Its statements on longitudinal research (Social Research Group, 1972) and family research (Harrell, et al., 1973) contain the beginnings of such hierarchies and indicate, as well, the agencies which have common research interests (and hence, possible interrelated objectives).

We have said that research evaluation and coordination must be based upon planning which starts with a statement of measurable objectives, but the advancement of knowledge, the improvement of interventions, and the planning of new research itself depends upon the implementation of research findings both by researchers (knowledge seekers) and practitioners (knowledge users). Unless the knowledge generated by research is disseminated and utilized by those who must understand and use it, research becomes merely an empty exercise. (This does not eliminate the seeking of knowledge for its own sake, or basic research, since the use of knowledge for theory building and as a base for further knowledge seeking and understanding is one of its most important applications.) Among those who can benefit from the understanding and/or application of research findings are parents, young people, researchers from related disciplines, school people, including teacher training institutions, employers, labor unions, community health and welfare agencies, including hospital personnel, and legislators and other policy makers. The success with which information is implemented appears to depend upon the field involved. In education, for example, a planning document for the National Institute of Education states that the implementation of research by means of a closer linkage of the educational research and operating communities is "by far the most critical problem of educational research and development and

should be the subject of extensive and varied efforts" (Levien, 1971, p. 7). In the health field (maternal and child health, specifically), on the other hand, one authority believes the following:

The most productive area for research undoubtedly is demonstrating techniques of disseminating and utilizing knowledge and skills. This has now emerged as a science with a good theoretical and conceptual framework and what is needed are sustained field trials of different approaches which affect the consumer, the provider, the leading institutions, and the policy makers. (Gershenson, 1973, p. 26)

The implementation of new information consists both of the process of dissemination of information to potential users and their utilization of that information, and each process operates differently.

To accomplish the dissemination of research findings various devices are used. These include computer-based information systems, professional societies, journals, books and conferences. Formal and informal networks exist for the transfer of information within the scientific disciplines and depending on the discipline, the process is more or less successful. More work needs to be done not only within certain professions, but also in opening up channels of communication between disciplines and among the broad fields of health, law, education and employment. As Gershenson suggests, "Might not health care of children be more closely linked in with the entire educational process of learning and might not health join psychology, social work, and special education as essential components?" (Gershenson, 1973, p. 25).

Research relating to dissemination can be placed in two broad categories, each containing individual problems for research: (1) the improvement and refinement of information systems, including consumer coverage information selection and processing, and management; (2) the study of the kinds of information that are most important to and the methods of dissemination that are most effective with each of the consumer categories. Looking at it broadly, research people, school people

and lay people, for example, will receive the same information differently, may want different information on the same subject, and will find different formats or media more attractive than others. Research is needed on the kinds of information and media that are most appropriate for each of the potential recipients of information.

The acceptance and utilization of information from the research community depends on whether or not, or to what extent, its utilization requires a change in current systems and procedures and also on the strength of the need or demand for change. Information which is assessed as being helpful to some extent and which can be accommodated by present methods will generally not be rejected. However, when innovation and change are required other factors may come into play, especially when the proposed change is perceived as having unfavorable consequences by those who must implement the change.

The challenge for research when this is the case revolves around the question of how individuals and institutions--those that affect the lives of adolescents, for our purposes--can be made receptive to deep-seated change. Or, putting the problem another way, how can threatening new ideas and methods be made acceptable to individuals and organizations? These are questions related to the issue of institutional change, a recurrent theme in this report. Throughout, the point has been presented that change in our basic socializing institutions must be the forerunner to the development of young people who can be responsible, participating members of society. A recent NIE document illustrates the problems and the kinds of questions relating to institutional change that research needs to address (Rosenfeld, 1973). The document describes the kind of school change that is needed as the "building of problem-solving capacity":

We suspect that worthy products of research and development will be used neither much nor wisely unless schools reach out for them--demand them--as part of a healthy, continuing process in which they

are the principal agents of their own self-improvement. Thus we emphasize the necessity of building problem-solving capacity in the schools and constructing a network of resources--intermediaries, information systems, an engaged citizenry--that will help them to build that capacity." (Rosenfeld, 1973, pp. 2-28)

Research recommendations are given for each of the resources mentioned and other areas, including the "social, organizational, bureaucratic and psychological characteristics of schools that are the crucial determinants of the adoption and implementation process" (Rosenfeld, 1973, pp. 2-28). Not only do we need to know more about these characteristics, "we need to fashion our research, development and implementation program in the light of what we learn" (Rosenfeld, 1973, pp. 2-28).

Some specific kinds of research, related to increasing the school's problem-solving capacities are the following (Rosenfeld, 1973, pp. B 9-6 to 9-18):

1. Tracer studies of the response of individual schools and school systems to state and Federal grant-in-aid programs designed to stimulate innovation and problem-solving behavior.
2. Longitudinal case studies of selected existing school institutional arrangements that appear to have promise of promoting problem-solving capability.
3. A series of descriptive reviews and surveys to catalogue both "past" and "current" efforts to create and maintain intermediary organizations. These surveys should include many different types of intermediaries (e.g., State departments and intermediate units, teacher centers, school study councils, extension agents).
4. Case studies to document and analyze selected situations in which community and/or parent participation is stimulating or supporting important aspects of a school's or school district's problem-solving behavior.

In order to make the R and D system more responsive to the needs of its consumers, and in this way to increase research utilization, the following approaches are representative of those recommended for future research (Rosenfeld, 1973, pp. B 9-22 to 9-26):

5. Procedures should enable school staff, students, state education agencies, the lay community and others outside the formal research and development community to participate in the identification of research and development problems and the establishment of Institute program priorities.
6. More research and development should be conducted in user settings and with user collaboration.
7. A program of consumer information should be developed to generate user-oriented information about research and development products.
8. Market-creation or market-subsidy should be instituted for the distribution of innovations with high user value.

These approaches would find similar application in health and welfare areas.

The effective operation of organizations in general is a topic directly related to the implementation of research, whether drastic or little implication for change is involved. Summarized in Schmuk and Runkel's Handbook of Organization Development in Schools (1972), the domain of organization development includes a number of promising areas for research: clarifying communication, establishing goals, uncovering and working with conflicts, solving problems, making decisions, designing training, and program evaluation. Research in these areas and the development of effective implementation methods, along with the improvement of research planning, will contribute to more fruitful research endeavors.

We have concluded part two with a section on research questions associated with some general concepts and procedures of research. The topics covered were: (1) the global or ecological approach to research; (2) research to benefit all young people; (3) study of research methodology; and (4) planning and dissemination of research findings. In other sections we discussed the developmental process, influences on healthy growth and development, and societal institutions used to assist the transition of youth to adulthood. The current status of research in Federal agencies in each of these major areas will be analyzed in Chapter II.

Summary of Research Recommendations

In the above discussion we have attempted to develop a basic hypothesis related to the achievement of optimum growth and development of the adolescent, along cognitive, social, emotional and physical lines. Optimum development includes preparation of the young for effective and positive participation in adult roles and activities. It is postulated that in order to achieve full potential as healthy, contributing adults, young people must be given an opportunity to participate directly as youth in the kinds of activities they will be expected to carry out as adults. Present societal institutions tend to exclude the young from involvement in meaningful and significant experiences--to control and restrain rather than facilitate development (Hill, 1973). These practices have contributed to the segregation of the developing young person from other age groups, and the separation of young and old has led to further alienation and exclusion of youth from the adult community.

Social Research. It is recommended that research attempt to help answer the question of whether direct involvement and experience in decision-making and planning, and actual involvement with adults in adult activities, will result in better communication between young and old and will promote a better preparation of youth for adulthood. What is recommended is the study of a range of alternatives to present arrangements in a variety of social institutions and the legislation affecting them. Since giving youth new roles involves basic changes in the attitudes of adults toward the young as well as change in the basic social institutions, this is a highly complex proposition--one requiring the careful planning of research programs in areas where answers may be forthcoming only at some point in the future.

The above pages have described at length current issues and promising and significant areas of research related to the family, the school and the workplace. In addition, specific questions with respect to health service planning

and delivery, and changes in the juvenile justice system have been identified. A common approach with regard to research in these areas is suggested: small-scale experimentation should take place as a precedent to any significant policy change or broad-scale social planning, and youth should be allowed to participate in research efforts. The job of research here is seen as that of providing information upon which to base policy decisions and program planning.

The significant thing about the majority of the recommendations for research on social institutions is that they are related to ways of changing the institutions: making education more relevant, work more fulfilling, parents more responsive, and finding more effective ways of handling delinquent youth, plus better means of coordinating and integrating health and other community services. The process of institutional change and the impact of such change on individuals is in itself an important area for investigation.

Development Process Research. A number of issues related to the developmental process and questions needing answers were discussed. In the physical development area, for example, the need to know more about the nutrient requirements of the adolescent was pointed out. In the cognitive area more information is needed about all aspects of intellectual functioning and how the attainment of various levels of functioning can be related to learning situations. The socio-emotional life of the adolescent has been of interest historically. The presumed stress and strain of this age period has influenced the thinking and behavior of adults toward the young. How much of this "disturbance" is of social origin and how much genetic is an interesting investigative question, the answer to which will influence the search for ways to help the adolescent adapt to his changing status and the social pressures which he experiences. Of particular concern in the developmental area is

the dearth of research and lack of knowledge about the development of adolescents in all three components--physical, socio-emotional and cognitive.

The Research Process. Research questions relating to general principles and procedures of research were raised. One approach to research recommended was the so-called ecological approach. This is a viewpoint and technique of the researcher which attempts to discern the interaction of relevant variables, thus deriving the greatest meaning from any one research undertaking. It would apply, for example, in determining the total effect on the young person of any one influence or intervention, and would take into account the reciprocal relationship between the cognitive, social and physical components of development. The trend toward the development of comprehensive health care programs and the coordination and integration of other services at the local level are evidence of the "ecological" approach to program planning.

Another recommended approach called for planned research that would benefit all young people, based upon the premise that all children have a right to benefit from the expenditure of research dollars. The remedial rather than the preventive posture of research and social programs has resulted in an apparent emphasis on children with special problems. It is not suggested that these programs be replaced but that all young persons, even those without serious problems, be considered in the planning of research programs.

A third set of recommendations relating to the research process had to do with studies to yield information about methods of conducting research, i.e., research methodology. For example, the need for and the problems associated with conducting longitudinal research were pointed out along with the lack of measurement instruments in all three developmental

areas. Such assessment instruments are essential for the evaluation of research. Another area for study is the development of standard definitions and measures (marker variables) which are crucial for data collection purposes and for the comparison, coordination and analysis of research.

Finally, research needs related to two steps of the research process were discussed. In the planning of research, the importance of stating the objectives of the research effort in operational terms was stressed so that criteria for assessment are available. Planning is especially important for the initiation and conduct of the kind of comprehensive research efforts recommended here. Planning is necessary for the coordination of research among agencies who may sponsor different parts of a broad-scale effort, and to provide for the continuity of funding on a long-term basis that may be required. The Interagency Panel for Research and Development on Adolescence is working in the direction of coordinated, cross-agency research planning. More study needs to be given to the mechanism of interagency coordination of research.

Since the expenditure of research effort and money is wasted unless research results are implemented in a useful way, some areas for study related to the dissemination and utilization of research findings were described. The utilization of research information in actual operating situations is directly concerned with methods of institutional change. Employees, school people, parents, and legal and health officials must be persuaded to adopt recommended changes which may affect the institutions in which they function.

Theory Building. In order for research findings in all the areas described to fit into an overall unifying structure, and to provide the basis for future research, our last recommendation is that attention be given to the building of a theory of adolescent development. Hill points out the

need: "There as yet exists no theory of human development equal to the task of describing the phenomenon of adolescence, organizing existing knowledge about those phenomenon, rendering them comprehensive, or making clear the general outlines or specifics of what is not yet known" (Hill, 1973, p. 11). Better understanding of the phenomenon of adolescence will provide a foundation for future social as well as developmental research pertaining to young people.

CHAPTER II

DESCRIPTION AND ANALYSIS OF FY '73 RESEARCH, BY AGENCY AND ACROSS AGENCIES

In this chapter will be discussed the research related to adolescence which was supported by agencies of the Interagency Panel in fiscal year 1973. First, a table showing the total number of projects and funding for each agency is presented. Next, the cross-agency situation with regard to selected research categories is summarized and, lastly, the research of each agency is tabulated by research category and described. Interpreting the Data: The basis for the descriptions and analysis to follow is the statement on research issues and questions presented in the previous chapter, which outlines areas of research in adolescence considered currently significant by members of the Interagency Panel and other researchers. From that statement, some of the most important issues or questions have been selected for analysis in this chapter, both to give a picture of individual agency emphasis and to show by the absence of activity across agencies where additional research may be needed in the future.*

The analyses of representative research issues in this chapter are based primarily on amount of activity in terms of the number of programs or projects supported by an agency. Both the decision to focus on number of projects and to select sample areas for examination in Chapter II were a result of the availability of information and its adequacy for detailed analysis. The data included in this report are reflective of

*While analyses in this Chapter review only a sample of the areas in which research was conducted in FY '73, the Appendix which outlines plans for FY '74 contains information on many more questions, representing the possible universe of research on adolescence described in Chapter I.

the information available from each agency. In many instances, staffing and organizational issues in the agencies in FY '73 delayed the provision of complete and/or detailed information. The following descriptions for FY '73 represent the research activities as reported by the individual agencies at the time this document was being prepared. For purposes of data reporting, adolescence is defined as including ages 9 through 21. Counted in the research on adolescence are projects dealing with adolescents, although the research may also include work with children or adults.

It is important when examining the tables and reading the analyses to remember that the data for the categories used are generally overlapping. (This is a function of the coding of projects for computer entry, which is based upon descriptions of research provided by the agency.) That is, the percentages shown do not designate mutually exclusive research efforts in any one research category. That is why the total for any agency may equal more than 100 percent. What the percentages mean, for example, is that 27 percent of the total number of projects for a particular agency include research, say on socio-emotional development. Those same projects or some of them may also have been coded for the family and the delinquent child, or other categories as representing important elements of the research. Whenever categories are not mutually exclusive, it will be so stated.

Categories Used for Analysis

Selected from the statement of research needs in Chapter I, the following outlined list represents the categories used for the analyses of FY '73 research supported by the agency members of the Interagency Panel for Research and Development on Adolescence. There are two major divisions: areas of research which pertain to content and population, and kinds of research which are concerned with primary purpose. The kinds of research included are defined below. For areas of research, the items covered within each category for classifying and

coding purposes are stated; the meanings of the terms used for research areas are explicated in Chapter I.

Areas of Research

1. Developmental Processes:

Cognitive Development - includes concept formation, learning processes, language development, as well as sensory and perceptual development.

Social-Emotional Development - includes coping ability, interpersonal relations, self-concept, and motivation.

Physical Development - includes psychomotor and sensorimotor growth patterns, metamorphosis and morphometry, as well as studies of physical health and disease.

2. Health and Welfare:

Nutrition - includes nutrition service programs and studies of nutrients and nutritional needs.

Delinquency - includes treatment and prevention services and studies of cause and effect of delinquency.

Service Delivery - includes the development and improvement of delivery systems for a variety of health and welfare services.

Protective/Advocacy Services - includes programs at the local level for neglected, abused, foster, and adopted young people and other young people in need.

3. Preparation for Adulthood:

Family Influences - includes the ecology of the home, intrafamily relationships, family health, and variant family forms.

Educational Innovations - includes cross-age tutoring, individualized instruction, child-centered instruction, and television instruction.

School-Community Interface - includes projects which attempt direct involvement of parents and community agencies in the activities of the school.

Career Education - includes projects in which the concept and/or practice of career education has been introduced at one or more levels of instruction.

Vocational/Technical Education - includes studies focused on preparation for work or specific occupations which may or may not be part of a career education effort.

4. Global Approach - includes studies reported as focusing on the development or reaction of the child as a total entity, those studying all three developmental processes and/or those studying the effect on the young person of two or more interacting environmental variables.

5. Research Target Groups (Young People Benefitted):

Young People with Special Characteristics - includes those not classified as "average" or "normal", i.e., young people with a variety of problems, abilities, and backgrounds, including the handicapped and the disadvantaged.

Handicapped - includes physically handicapped, emotionally disturbed, mentally retarded, and learning disabled.

Disadvantaged - includes young people from lower income and poverty levels or those designated by an agency as disadvantaged.

6. Methodology - includes studies on longitudinal and interdisciplinary or interagency methodology; also includes research on behavior observation techniques and marker variables and research to develop assessment instruments.

Development of Tests and Measures - includes instruments for program evaluation and for the assessment of growth and development during adolescence.

7. Planning and Implementation:

Planning - includes activities aimed primarily at the development of goals and objectives for social policy and programs and research efforts.

Implementation - includes dissemination activities (by conferences, printed material, etc.) and utilization of research findings in actual operating situations.

Kinds of Research

1. **Basic Research** - research directed primarily toward the increase of knowledge, the improvement of understanding, and the discovery of basic relationships; not necessarily applicable to solutions of immediate problems.
2. **Applied Research** - results are intended to be more directly applicable to immediate problems than basic research findings; applied research may be derived from basic research or theory or may be empirical; it is aimed at showing how existing knowledge can be used in new and useful ways. In the overall analysis, applied research is considered as a category unto itself, as well as covering the following kinds of research:

Development - concerned with the construction of tests, systems, materials, methods, media, equipment, facilities, and prototypes to provide for implementation of either basic or applied research.

Pilot Studies - small scale initial trials to determine the feasibility of conducting larger efforts, including the identification of possible problems.

Demonstrations - activities designed specifically to show the method of operation or applicability of a research or program model.

3. **Evaluations** - includes studies to assess overall project impact; to compare various models, strategies or materials; and to determine the cost-effectiveness of planned programs.
4. **Planning Projects** - activities aimed specifically at some aspect of designing or developing research projects.
5. **Dissemination Projects** - includes state-of-the-art studies, research syntheses and other analyses of existing data, as well as transmittal of research information to users by printed and other means.
6. **Longitudinal Research** - research on the same individuals or groups with similar characteristics to determine the effects over time of natural events or planned interventions.

Description and Analysis of FY '73 Federal Research on Adolescence

The FY '73 analysis of research on adolescence covers efforts sponsored by nine Federal agencies, one of which, the Office of Education, reported data from four bureaus and one center (see Table 1). Data from some 1,267 individual projects, with a total budget of approximately \$251 million, were collected and analyzed as a basis for the descriptions to follow. A cross-agency view pointing out areas in need of further study is given first and this is followed by a tabulation of each agency's research. This chapter concludes with a summary of each agency's research emphasis.

Overview of FY '73 Research

In this section we will discuss the areas and kinds of research from which an overall view are seen to be those which had the least--and conversely, the greatest--amount of Federal support in fiscal year 1973. Since the research categories used for analysis represent those designated by the Interagency Panel as being of high priority concern, the discussion will serve to point up some possible gaps in research pertaining to young people. Relatively small numbers of projects or low funding amounts do not indicate, necessarily, in and of themselves, insufficient research activity. Such information will, however, point out specific areas for the Panel to scrutinize more closely as they consider research activity in relationship to research need.

Table 2 shows the distribution of research in priority areas, based on the grand total of the number of projects supported by the agencies in FY '73. Here, as in other tables, the projects represented by the percentage for any one area may also include research in one or more of the other areas. The percentages do not represent mutually exclusive categories. The rank order of percents is included to assist analysis.

Table 1
Activity and Funding in Federal Research
on Adolescence by Agency, FY '73

	<u>No. of Projects</u>	<u>Dollars in Millions</u>
1. Office of Child Development (OCD)	76	7.2
2. National Institute of Child Health and Human Development (NICHD)	53	3.5
3. National Institute of Mental Health (NIMH)	98	7.0
Intramural Research	17	--*
4. Maternal and Child Health Services (MCHS) **	32	2.9
5. Social and Rehabilitation Service (SRS)	45	1.9
6. National Institute of Education (NIE)	309	81.2
7. OE, Bureau of Education for the Handicapped (BEH)	128	21.4
8. OE, Bureau of Elementary and Secondary Education, Division of Plans and Supplementary Centers (Title III)	88	20.1 ⁺
9. OE, Bureau of Elementary and Secondary Education, Division of Bilingual Education (Title VII)	73	12.4
10. OE, Bureau of Occupational and Adult Education (BOAE)	142	70.3
11. OE, National Center for Education Technology (NCET)	10	9.3
12. OE, Office of Planning, Budgeting and Evaluation	34	18.3
13. Department of Agriculture (USDA)	98	--*
14. Department of Labor (DOL)	53	2.4

*Funding information was not available for NIMH Intramural Research nor USDA Research at time of writing.

**MCHS is now the Bureau of Community Health Services, Health Services Administration.

⁺This figure represents the Title III funding for all early childhood and adolescent projects administered at the national level.

Starting first with areas of research, the research category which for every agency was represented in more than 15 percent of its research projects was that characterized as focusing on youth with special characteristics (See Table 3 for agency emphases). In fact, in all but four agencies, research pertaining to these youth was represented in over 39 percent of agency research. Table 2 shows that for all agencies research related to youth with special characteristics was 57 percent of the total reported research effort on adolescence. Since this category included youth from different SES levels, including the disadvantaged, youth from different geographic locations, youth of different ages, and handicapped youth, it tends to represent the research focus of agencies with different kinds of agency missions and objectives. It may also suggest that the orientation of Federal programs is to support remedial rather than preventive efforts, with a focus on cure and problem solution to a large extent. The fact that 25 percent of the research effort focused on the disadvantaged and 24 percent on the handicapped supports this observation. However, in 43 percent of the research, "normal" or "average" or "healthy" children were just as important as children with special backgrounds, problems, and needs.

In looking at the next two categories in Table 2, it is interesting to note that the two processes, cognitive development and social-emotional development, were studied in equal amounts (39%). This represents a difference from the situation of recent years in early childhood research in which the primary emphasis has been on the cognitive area. It should be noted that while 39 percent of the projects included research in these two areas, much of the work in both areas had a special focus. First, in cognitive development, most of the research was related to educational achievement. Second, the emphasis on work experience and career education by several agencies may account for the relatively large amount of study

Table 2

All Agency Distribution and Rank Order
(By Percent) of Areas of Research, FY '73

N = 1281

	<u>Percent Rank</u>
Above 40% - Special Characteristics	57%
26 to 40% - Social-Emotional Development	39%
- Cognitive Development	39%
21 to 25% - Implementation	25%
- Disadvantaged	25%
- Handicapped	24%
16 to 20% - Health and Welfare Delivery Systems	17%
- Vocational/Technical Education	16%
11 to 15% - Educational Innovations	14%
- Career Education	14%
- Physical Development	13%
- School-Community Interface	12%
6 to 10% - Influence of Family	10%
- Global Approach	7%
- Longitudinal Research	7%
1 to 5% - Advocacy and Protective Services	5%
- Nutrition	4%
- Planning-Research Goals	4%
- Methodology	3%
- Delinquency	2%
- Measures Development	2%

in the social-emotional area, in that attitude toward work, aspiration level, and relations with others are included in the social-emotional research category and in addition are important aspects of work experience.

Vocational/technical education was, in fact, included in 16 percent of the cross-agency research and career education in 14 percent (remember there is an overlap between these categories). Every agency except three supported research in the vocational area, with the Department of Labor and the Bureau of Occupational and Adult Education showing the largest amounts. (Career education shows a different distribution. See Table 3.)

Compared with the research on the cognitive and social-emotional processes, that on physical development was dramatically low--13 percent, compared with 39 percent--thus being represented in 26 percent less work than the other processes. It was a major focus in two agencies (over 39 percent in MCHS and NICHD), and while this amount of work may be providing a sufficient base for the planning of health service programs and additional health research, this may be an area deserving special attention by the Interagency Panel. The study and development of health and welfare delivery systems was represented in 17 percent of the total research effort on adolescence. A significant topic for Panel consideration may be the relationship (existing and potential) between the studies of physical growth and development and those concerned with the provision (delivery) of improved health care.

The three areas within the health and welfare category selected for examination because of their importance during adolescence represent from the overall view relatively low levels of work: 5 percent for protective services and advocacy, 4 percent of nutrition research, and only 2 percent for delinquency. Because of the importance of these areas, the panel may

Table 3. Distribution of Areas of Research of Agency*
Based on Number of Programs or Projects in Each Agency, FY '73
(Categories are not mutually exclusive)

Areas of Research	OCN N=76	NICHD N=53	NIMH N=115	MCHS N=32	SRS N=45	NIE N=309	BEH N=128	TITLE III N=88	BILING. EDUC. N=73	BOAE N=7	NCET N=10	OPBE N=34	USDA N=98	DOL N=53
I. Developmental Process														
Cognitive growth and development	+	X	•	+	+	X	•	•	•	X	X	•	•	•
Social-emotional growth and development	•	•	X	•	X	•	•	•	•	X	+	+	X	X
Physical growth and development	+	X	•	X	+	+	+	+					•	
II. Health and Welfare														
Nutrition	+	+	+	•	+			+					X	
Delinquency	+		+		•									+
Advocacy and protective services	•		+		•	+	+	+		+				
Service delivery	X		+	X	•	•	•	+	+	+		+	+	•

X = Research in the area indicated was included in 40% or more of the agency projects.

• = Research in the area indicated was included in 16% - 39% of the projects.

+ = Research in the area indicated was included in 15% or fewer projects.

* Read down to determine agency foci; read across for research emphasis in FY '73.

Table 3. Distribution of Areas of Research of Agency*
Based on Number of Programs or Projects in Each Agency, FY '73
(Categories are not mutually exclusive)
(continued)

Areas of Research	OCD N=76	NICHD N=53	NIMH N=115	MCHS N=32	SRS N=45	NIE N=309	BEH N=128	TITLE III N=88	BILING. EDUC. N=73	BOAE N=7	NCET N=10	OPBE N=34	USDA N=98	DOL N=53
III. Preparation for Adulthood														
Family Influence	•	•	•	+	•	+	+	•					X	+
Educational innovations	•	+		+		•	•	X	+	•	X		+	+
School/community interface	+			+		+	+	X	X	•		+		
Career education	+					•	+	+		X	X		+	•
Vocational/technical education	+			+	+	+	+	+		X	+	+	+	X
IV. Global Approach	+	•	+	+	+	+	+	+		+			•	+
V. Research Target Groups														
Children with special characteristics	X	•	X	X	X	•	X	X	X	X	•	X	•	X
Handicapped children	+	+	X	•	X	+	X	X	+	+	+	+		+
Disadvantaged children	•	+	+	•	•	•	+	•	X	X	•	•	X	X

X = Research in the area indicated was included in 40% or more of the agency projects.
 • = Research in the area indicated was included in 16% - 39% of the projects.
 + = Research in the area indicated was included in 15% or fewer projects

* Read down to determine agency foci; read across for research emphasis in FY '73.

Table 3. Distribution of Areas of Research of Agency*
Based on Number of Programs or Projects in Each Agency, FY '73
(Categories are not mutually exclusive)
(continued)

Areas of Research	OCD N=76	NICHD N=53	NIMH N=115	MCHS N=32	SRS N=45	NIE N=309	BEH N=128	TITLE III N=88	BILING. EDUC. N=73	BOAE N=7	NCET N=10	OPBE N=34	USDA N=98	DOL N=53
VI. Methodology	+	+	+	+	+	+							+	+
Development of measures		+	+		+	+							+	+
VII. Planning-Research Goals	+			+	+	+	+	+		+	+	•	+	
VII. Implementation (cont)	X	+		•	•	•	X	X	•	+	X	•	+	•

X = Research in the area indicated was included in 40% or more of the agency projects.
• = Research in the area indicated was included in 16% - 39% of the projects.
+ = Research in the area indicated was included in 15% or fewer projects.

* Read down to determine agency foci; read across for research emphasis in FY '73.

wish to study them further. For example, while protective services and nutrition are represented in relatively small amounts of the overall research, work in these areas is spread across a number of agencies. This suggests that research representing a variety of approaches is being conducted in these areas and hence, the major need may be the cross-dissemination of research information between the agencies involved. Also, it is expected that studies pertaining to delinquents will be included in the work of the Office of Human Development (see Chapter III).

In addition to the research on work as a means of socialization for adulthood, research on the influence of the family and selected school innovations was included for examination. The figure of 10 percent of the overall research for the study of family influences on adolescent development includes a variety of topics. Among them are the effect of other family members, of health and illness in the family and the influence of interrelated variables in the home environment (ecology of the home). Educational innovations (14%) included individualized instruction, television instruction, and cross-age tutoring, with over half the total accounted for by television instruction. Except insofar as television instruction provided for education outside the school system, little research was reported on educational alternatives to the present school system. The relatively high figure for research including school-community interface is a result of the major focus of two OE programs on this aspect of education. Most of the 73 research projects of the Division of Bilingual Education and over half of the innovative projects of the Division of Plans and Supplementary Centers include the involvement of the community in school activities. Other agencies are also conducting research in this priority area (see Table 3).

Moving on to areas of research dealing with general principles and techniques, we find that ecological research as a

whole, i.e., that using the global approach, was represented in only 7 percent of the total effort. This may be an area needing additional attention in order to provide for better integration of research findings. Research aimed at improving research methodology may also benefit from expansion; it accounts for only 3 percent of the total. The development of tests and measures, a subcategory of methodology, is included in 2 percent of the overall work. Longitudinal research is a feature of 7 percent of the work. The development of goals and objectives in the planning process is at a low level of 4 percent. And lastly, research to study and improve implementation techniques is found in 25% of the total agency activity. The latter, which includes utilization of information in actual operating situations as well as the dissemination of research information to a variety of potential users, is an area identified as being a significant concern in research on adolescence. Its ranking well toward the middle range of activity and its broad prevalence in the agencies is promising. The relatively large amount of activity in this area is partly a result of the coding under the Implementation category of community programs, such as Bilingual Education, and local educational service programs like those supported by BEH. This is another area for possible further investigation by the Panel.

To conclude this overview of areas of Federal agency research on adolescence, some areas appear very strong, i.e., cognitive development and socio-emotional development. On the other hand, some very important areas need further consideration to determine the adequacy of the effort. All of the areas in Table 2 which fall below 10 percent may need expansion. But expansion in these and other categories must be considered in the light of each agency's contribution and its relationship to the research of other agencies. With regard to health services, for example, these questions might be asked, "What specific research does the \$7 million budget of OCD support for

the delivery of health care to young people?" "How might this effort be related to those of MCHS, NIMH and BEH, which also serve children with health problems, or to that of NICHD or USDA which conduct research relating to basic health issues?" Answers to questions such as these are needed in order to make the coordination of research efforts optimally effective in all areas of research on adolescence.

Tables 4, 5 and 6 deal with kinds of research rather than areas of research. The percentages represent projects for which the primary thrust of the research was indicated to be basic, applied, evaluation, planning, or dissemination. The latter two categories represent actual planning and dissemination projects rather than research on ways to improve planning and dissemination which were included above in the section on areas of research. (See Categories Used for Analysis for definition of terms.) Table 4 also shows applied research broken into development, pilot studies, and demonstrations. A major difference between the Tables presenting kinds of research and those presenting areas of research is that the categories for the former do not overlap. In contrast to areas of research, kinds of research do represent mutually exclusive categories.

Tables 5 and 6 make it clear that the primary emphasis in both amount of effort and funding of research is on applied research (over 50% for both). From Table 6 we see further, that funding for applied research is substantially greater than the amount of work for the same category, with the reverse being true for basic research. (The total amount of basic research is 20.7 percent while total funding is 4.6 percent.) Evaluations, planning and dissemination efforts together represent about 20% of the total research. Basic research is of major concern (40% or more) in three agencies, while every agency but three, have over 39 percent of their projects defined as applied research. Evaluations, planning and dissemination projects are represented at relatively low levels in a majority of agencies.

Table 4. Distribution of Kinds of Research by Agency
Based on Number of Programs or Projects in Each Agency, FY '73
(Categories are not mutually exclusive)

Kinds of Research	OCD N=76	NICHD N=53	NIMH N=115	MCHS N=32	SRS N=45	NIE N=309	BEH N=128	TITLE III N=88	EDUC. N=73	BOAE N=7	NCET N=10	OPBE N=34	USDA N=98	DOL N=53
Basic Research	+	X	X		•	•							X	+
Applied Research	X	+	•	X	X	X	X	X	X	X	X	+	X	X
Development Projects	•	+	+	•	•	•	•	X	+	X	X	+	+	•
Pilot Studies	+		+		+	+	+	+		+			+	+
Demonstration Projects	X		+		+	+	•	X	X	X			+	+
Evaluations	+	+	+	•	•	•	+			+	+	X	+	•
Planning Projects	+			+		+	+		+	+	•	+		+
Dissemination Projects	+	+		+	+	+	+	+			+	+		+
Longitudinal Research	+	•	+	•	+	+	+	+				+	•	+

X = Research in the area indicated was included in 40% or more of the agency projects.
 • = Research in the area indicated was included in 16% - 39% of the projects.
 + = Research in the area indicated was included in 15% or fewer projects.

Table 5*
PER CENT OF TOTAL NUMBER OF RESEARCH PROJECTS
BY KINDS OF RESEARCH, FY '73

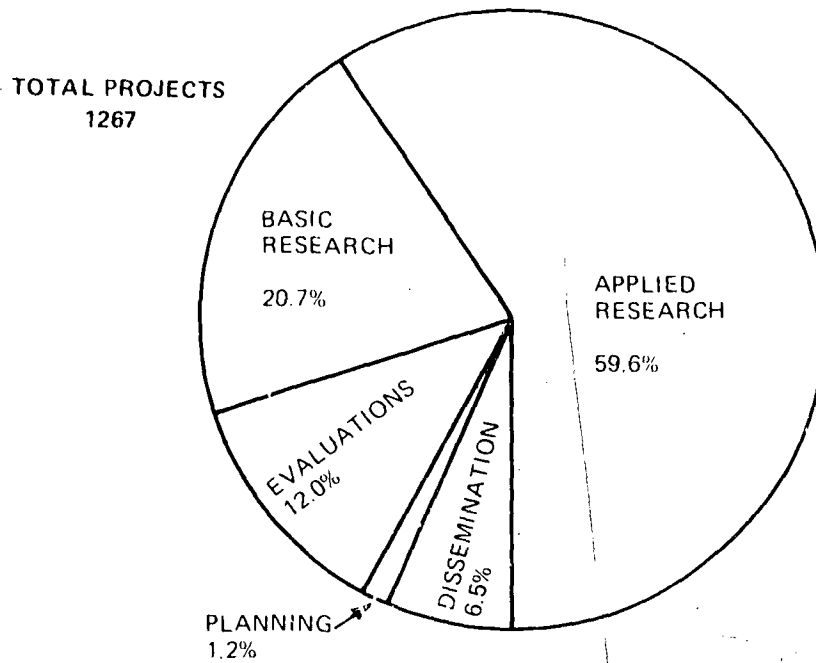
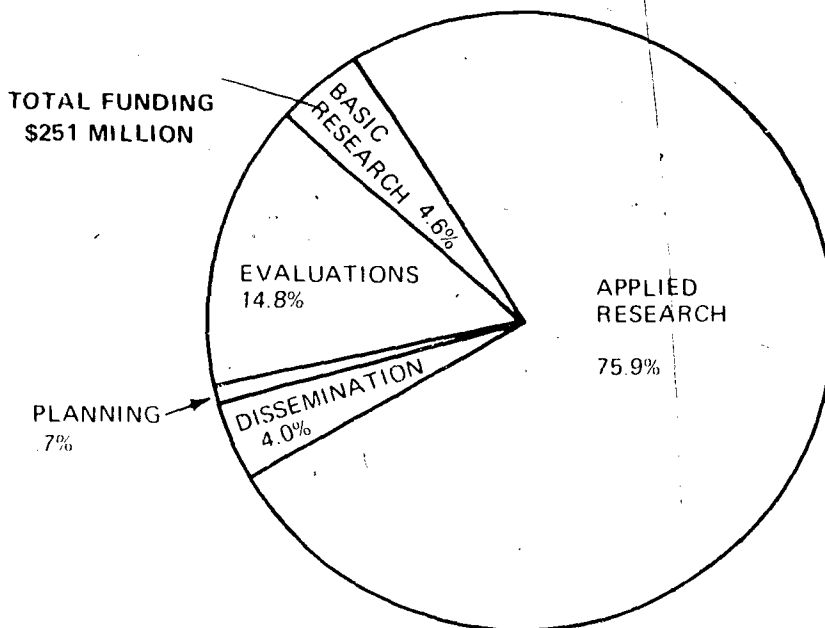


Table 6*
PER CENT OF TOTAL FUNDING BY KINDS OF RESEARCH
FY '73



*Percentages represent
non-mutually
exclusive categories.

As with areas of research, here the determination of whether each category is adequately represented depends upon a further examination of the nature of the efforts and how research in various categories may be related. Thus the planning and dissemination projects are especially important and we may make the tentative conclusion that more support needs to be given these kinds of research, now representing 6.5 percent for dissemination of research findings; and 1.2% for the planning of policy, program and research efforts. This completes the overview of all agency research conducted in FY '73. An agency-by-agency description of adolescence research follows.

Tabulations of FY '73 Research
by Agency

Office of Child Development
Office of Human Development
Office of the Secretary, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH

0 FY '73 Funding: \$7.2 million

0 Number of Programs or Projects Active in FY '73: 76

0 Mission and/or Functions in Adolescence Research:

The Office of Child Development has four major missions: (1) to operate such programs for children as Head Start and Parent and Child Centers; (2) to develop innovative programs for children and parents; (3) to serve as a point of coordination for all Federal programs for children, youth and their families; and (4) to act as an advocate for children by bringing their needs to the attention of government the public. The two areas of research emphases for youth in FY '73 were research on pre-adolescent and adolescent violence, and youth initiated projects providing alternative roles for youth, such as running crisis centers, serving on policy making bodies and helping to revise curricula.

0 FY '73 Distribution of Research by Area (Categories are not mutually exclusive. One study may involve several of the areas listed.)

15% or below*

Cognitive growth and development
Physical growth and development
School-community Interface
Vocational/technical education
Career education
Planning-research goals
Nutrition
Delinquency
Handicapped
Global approach
Methodology

16% - 39%

Social-emotional growth and development
Influence of family
Advocacy and protective services
Educational innovations
Disadvantaged

40% or above

Delivery systems
Special characteristics
Implementation

*When no research was reported within a category, the name was not included.

Office of Child Development
Office of Human Development
Office of the Secretary, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH (continued)

Distribution of Research by Kind of Research in FY '73
(Categories are mutually exclusive.)

Basic Research	9.2%
Applied Research	77.6%
Development	23.7%
Pilot Studies	1.3%
Demonstration	43.4%
Evaluations	5.3%
Planning Projects	1.3%
Dissemination Projects	6.5%

National Institute of Child Health and Human Development
National Institutes of Health, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH

0 FY '73 Funding: \$3.5 million

0 Number of Programs or Projects Active in FY '73: 53

0 Mission and/or Functions in Adolescence Research:

The major objective of NICHD is to support research in the basic processes of human development, including those involved in social and behavioral development, as well as the biomedical processes. The recently expanded research program on adolescent development includes five areas of emphasis: the biological process, nutrition, intellectual development, socialization, and endocrines and psychological development. There is a heavy emphasis upon multidisciplinary efforts and longitudinal studies are utilized to study relationships across developmental stages.

0 FY '73 Distribution of Research by Area (Categories are not mutually exclusive. One study may involve several of the areas listed.)

15% or below*

Disadvantaged
Nutrition
Handicapped
Methodology
Measures development
Educational
innovations
Planning-research
goals

16% - 39%

Special
characteristics
Influence of
family
Global approach
Physical growth
and development

40% or above

Cognitive growth
and development
Social-emotional
growth and
development

*When no research was reported within a category, the name was not included.

National Institute of Child Health and Human Development
National Institutes of Health, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH (continued)

Distribution of Research by Kind of Research in FY '73
(Categories are mutually exclusive.)

Basic Research	78.6%	
Applied Research	16.0%	
Development		7.1%
Pilot Studies		0
Demonstration		0
Evaluations	3.6%	
Planning Projects	0	
Dissemination Projects	1.8%	

National Institute of Mental Health
Health Services and Mental Health Administration,+ DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH

0 FY '73 Funding: \$7.0 million**

0 Number of Programs or Projects Active in FY '73: 115

0 Mission and/or Functions in Adolescence Research:

The objectives of the research program of NIMH are to provide support of research on the etiology, diagnosis, treatment, prevention, and control of mental illness, and the promotion of mental health. NIMH is primarily responsible, therefore, for the support of applied, clinical, and basic research aimed either at the resolution of specific problems of mental and emotional illness, or at the augmenting of knowledge regarding the parameters of human behavior--including its prediction and control. The program also encompasses evaluations of community demonstrations of improved techniques of care for the mentally ill. Areas of study related to adolescents include occupational choice, drug abuse, sex role development, preparation for family roles, and crime and delinquency.

0 FY '73 Distribution of Research by Area (Categories are not mutually exclusive. One study may involve several of the areas listed.)

15% or below*

Delivery systems
Disadvantaged
Delinquency
Nutrition
Advocacy and
protective
services
Methodology
Measures development
Global approach

16% - 39%

Cognitive growth
and development
Physical growth
and development
Influence of
family

40% or above

Social-emotional
growth and
development
Special
characteristics
Handicapped

*Where no research was reported within a category, the name was not included.

+NIMH is now part of the Alcohol, Drug Abuse, and Mental Health Administration

**This figure does not include the funding for the 17 intramural research projects.

National Institute of Mental Health
Health Services and Mental Health Administration, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH (continued)

Distribution of Research by Kind of Research in FY '73
(Categories are mutually exclusive.)

Basic Research	57.8%
Applied Research	29.3%
Development	12.1%
Pilot Studies	0.9%
Demonstration	4.3%
Evaluations	12.9%
Planning Projects	0
Dissemination Projects	0

Maternal and Child Health Service+
Health Services and Mental Health Administration, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH

0 FY '73 Funding: \$2.9 million

0 Number of Programs or Projects Active in FY '73: 32

0 Mission and/or Functions in Adolescence Research:

The research grants program of the Maternal and Child Health Service is concerned with improving the operation, functioning, and effectiveness of maternal and child health and crippled children's services. Major areas of investigation include the delivery, usage, and evaluation of health services, existing health insurance plans and health manpower. With regard to adolescence, nutrition, pregnancy and healthy growth and development are of concern. Support is not available for basic research; the focus is on applied research and evaluation of delivery systems.

0 FY '73 Distribution of Research by Area (Categories are not mutually exclusive. One study may involve several of the areas listed.)

15% or below*

Cognitive growth and development
School-community interface
Vocational/technical education
Planning-research goals
Influence of family
Global approach
Educational innovation
Methodology

16% - 39%

Social-emotional growth and development
Disadvantaged
Nutrition
Handicapped
Implementation

40% or above

Physical growth and development
Delivery systems
Special characteristics

*Where no research was reported within a category, the name was not included.

+MCHS is now the Bureau of Community Health Services, Health Services Administration.

Maternal and Child Health Service
Health Services and Mental Health Administration, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH (continued)

Distribution of Research by Kind of Research in FY '73
(Categories are mutually exclusive.)

Basic Research	0
Applied Research	62.5%
Development	21.9%
Pilot Studies	0
Demonstration	0
Evaluations	25.0%
Planning Projects	3.1%
Dissemination Projects	9.3%

Social and Rehabilitation Service, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH

0 FY '73 Funding: \$1.9 million

0 Number of Programs or Projects Active in FY '73: 45

0 Mission and/or Functions in Adolescence Research:

The Social and Rehabilitation Service provides income maintenance, rehabilitation, and other social services to people in need. Among its research and development goals are the following: to develop methods of improving the services of community facilities through services integration and other innovative methods, to develop methods of increasing SRS client independence, particularly by developing alternatives to institutional care, and to develop and demonstrate improved methods of research utilization. FY '73 efforts also emphasized delinquency and drug abuse prevention.

0 FY '73 Distribution of Research by Area (Categories are not mutually exclusive. One study may involve several of the areas listed.)

15% or below*

Cognitive growth and development
Physical growth and development
Vocational/technical education
Planning-research goals
Nutrition
Methodology
Measures development
Global approach

16% - 39%

Delivery systems
Disadvantaged
Influence of family^m
Delinquency
Advocacy and protective services
Implementation

40% or above

Social-emotional growth and development
Special characteristics
Handicapped

*Where no research was reported within a category, the name was not included.

Social and Rehabilitation Service, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH (continued)

Distribution of Research by Kind of Research in FY '73
(Categories are mutually exclusive.)

Basic Research	20.0%
Applied Research	48.9%
Development	31.1%
Pilot Studies	2.2%
Demonstration	8.9%
Evaluations	26.7%
Planning Projects	0
Dissemination Projects	4.4%

National Institute of Education, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH

0 FY '73 Funding: \$81.2 million

0 Number of Programs or Projects Active in FY '73: 309

0 Mission and/or Functions in Adolescence Research:

The NIE mandate reasserts the National policy to provide equal opportunity and high quality education for all Americans. The Institute seeks to improve education through: (1) helping to solve or to alleviate the problems of American education and to advance the practice of education as an art, science and profession; (2) strengthening the scientific and technological foundations of education; and (3) building an effective educational research and development system. One of the problem areas to be investigated is that of providing quality learning and instruction, human development, measurement, and evaluation as well as studies in the academic disciplines. Work on a research and development system will focus on building an efficient organization for the dissemination of research findings.

0 FY '73 Distribution of Research by Area (Categories are not mutually exclusive. One study may involve several of the areas listed.)

15% or below*

Physical growth and development
School-community interface
Vocational/technical education
Planning-research goals
Influence of family
Advocacy and protective services
Handicapped
Methodology
Measures development
Global approach

16% - 39%

Social-emotional growth and development
Delivery systems
Special characteristics
Career education
Disadvantaged
Educational innovations
Implementation

40% or above

Cognitive growth and development

*Where no research was reported within a category, the name was not included.

National Institute of Education, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH (continued)

Distribution of Research by Kind of Research in FY '73
(Categories are mutually exclusive.)

Basic Research	18.8%
Applied Research	48.5%
Development	25.2%
Pilot Studies	2.6%
Demonstration	3.6%
Evaluations	17.2%
Planning Projects	1.2%
Dissemination Projects	14.2%

Bureau of Education for the Handicapped
Office of Education, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH

0 FY '73 Funding: \$21.4 million

0 Number of Programs or Projects Active in FY '73: 128

0 Mission and/or Functions in Adolescence Research:

The major mission of the Bureau of Education for the Handicapped is to insure that all handicapped children receive special education services to enable them to develop to their fullest potential and thereby reduce their degree of dependency. Of special relevance is the goal to provide realistic career educational training to every handicapped school child or young person. Research planning efforts to identify priority research issues to be investigated include career education, personnel preparation and the severely handicapped.

0 FY '73 Distribution of Research by Area (Categories are not mutually exclusive. One study may involve several of the areas listed.)

15% or below*

Physical growth and development
School-community interface
Vocational/technical education
Career education
Disadvantaged
Planning-research goals
Influence of family
Advocacy and protective services
Global approach

16% - 39%

Cognitive growth and development
Social-emotional growth and development
Educational innovations
Delivery systems

40% or above

Special characteristics
Handicapped
Implementation

*Where no research was reported within a category, the name was not included.

Bureau of Education for the Handicapped
Office of Education, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH (continued)

Distribution of Research by Kind of Research in FY '73
(Categories are mutually exclusive.)

Basic Research	0	
Applied Research	78.1%	
Development		39.0%
Pilot Studies		2.3%
Demonstration		33.6%
Evaluations	7.0%	
Planning Projects	.9%	
Dissemination Projects	14.0%	

Bureau of Elementary and Secondary Education
Office of Education, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH

0 FY '73 Funding: Division of Plans and Supplementary Centers,
\$20.1 million+

0 Number of Programs or Projects Active in FY '73: 88

0 Mission and/or Functions in Adolescence Research:

The purpose of the ESEA Title III program is to assist in providing vitally needed educational services and to support local projects designed to demonstrate innovative and exemplary methods of meeting critical educational needs. Fifteen percent of Title III funding is granted for local educational agency projects by the Office of Education for the solution of problems common to all or several states. (These projects are analyzed below.) Also 15 percent of state and local funds must be expended for research relating to the educational problems of the handicapped. Areas relevant to adolescence include environmental education, drug abuse, and student-youth activism.

0 FY '73 Distribution of Research by Area (Categories are not mutually exclusive. One study may involve several of the areas listed.)

15% or below*

Physical growth and development
Nutrition
Advocacy and protective services
Delivery systems
Career education
Vocational/technical education
Global approach
Planning-research goals

16% - 39%

Cognitive growth and development
Social-emotional growth and development
Influence of family
Disadvantaged

40% or above

School-community interface
Educational innovations
Implementation
Handicapped
Special characteristics

*Where no research was reported within a category, the name was not included.

+This figure represents the Title III funding for all Early Childhood, as well as adolescent projects administered at the national level..

Bureau of Elementary and Secondary Education
Office of Education, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH (continued)

Distribution of Research by Kind of Research in FY '73
(Categories are mutually exclusive.)

Basic Research	0	
Applied Research	97.7%	
Development		43.2%
Pilot Studies		4.6%
Demonstration		50.0%
Evaluations	0	
Planning Projects	.0	
Dissemination Projects	1.1%	

Bureau of Elementary and Secondary Education
Office of Education, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH

0 FY '73 Funding: Division of Bilingual Education, \$12.4 million

0 Number of Programs or Projects Active in FY '73: 73

0 Mission and/or Functions in Adolescence Research:

The Bilingual Education Division (Title VII) develops and operates bilingual-bicultural programs aimed at meeting the special educational problems of children and adolescents from low-income families who come from environments where the dominant language is not English. Children speaking Spanish, French, Chinese and a score of American Indian languages are among those served. Curriculum development, staff training and parent and community involvement are important aspects of the Division's projects.

0 FY '73 Distribution of Research by Area (Categories are not mutually exclusive. One study may involve several of the areas listed.)

15% or below*

Delivery systems
Handicapped
Educational
innovations

16% - 39%

Implementation
Cognitive growth
and development
Social-emotional
growth and
development

40% or above

School-community
interface
Special
characteristics
Disadvantaged

*Where no research was reported within a category, the name was not included.

Bureau of Elementary and Secondary Education
Office of Education, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH (continued)

Distribution of Research by Kind of Research in FY '73
(Categories are mutually exclusive.)

Basic Research	0
Applied Research	97.3%
Development	9.6%
Pilot Studies	0
Demonstration	87.7%
Evaluations	0
Planning Projects	2.7%
Dissemination Projects	0

Bureau of Occupational and Adult Education
Office of Education, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH

0 FY '73 Funding: \$70.4 million

0 Number of Programs or Projects Active in FY '73: 142

0 Mission and/or Functions in Adolescence Research:

Among the goals of the Bureau of Occupational and Adult Education are the following: to bring education in closer relation to the society in which individuals are to live and work; to improve and extend educational programs preparing individuals for self-fulfillment and occupational flexibility; to provide expanded access through occupational and vocational education to information on careers and to training for career entry and progression; to reduce the number of children and youth who do not complete their education in elementary and secondary schools. Research activities will focus on the development of programs of manpower research and demonstrations and include the support of psychological, demographic and economic research.

0 FY '73 Distribution of Research by Area (Categories are not mutually exclusive. One study may involve several of the areas listed.)

<u>15% or below*</u>	<u>16% - 39%</u>	<u>40% or above</u>
Delivery systems	School-community	Cognitive growth
Planning-research	interface	and development
goals	Educational	Social-emotional
Advocacy and protec-	innovations	growth and
tive services		development
Handicapped		Vocational/technical
Global approach		education
Implementation		Career education
		Disadvantaged
		Special
		characteristics

*Where no research was reported within a category, the name was not included.

Bureau of Occupational and Adult Education
Office of Education, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH (continued)

Distribution of Research by Kind of Research in FY '73
(Categories are mutually exclusive.)

Basic Research	0
Applied Research	97.9%
Development	50.0%
Pilot Studies	.7%
Demonstration	47.2%
Evaluations	.7%
Planning Projects	1.4%
Dissemination Projects	0

National Center for Educational Technology
Office of Education, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH

0 FY '73 Funding: \$9.3 million

0 Number of Programs or Projects Active in FY '73: 10

0 Mission and/or Functions in Adolescence Research:

The National Center for Educational Technology supports research to explore useful and productive applications of educational technology in a variety of settings and to benefit groups such as minority and geographically isolated populations. Specific projects of interest include exploring the use of educational technology in school and in the development of new communities, and studying the potential of educational technology for increasing the quality and quantity of cognitive and affective outputs of elementary, secondary, and higher education.

0 FY '73 Distribution of Research by Area (Categories are not mutually exclusive. One study may involve several of the areas listed.)

15% or below*

Social-emotional growth
and development
Vocational/technical
education
Planning-research
goals
Handicapped

16% - 39%

Disadvantaged
Special
characteristics

40% or above

Career
education
Education
innovation
Cognitive growth
and development
Implementation

*Where no research was reported within a category, the name was not included.

National Center for Educational Technology
Office of Education, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH (continued)

Distribution of Research by Kind of Research in FY '73
(Categories are mutually exclusive.)

Basic Research	0	
Applied Research	60.0%	
Development		60.0%
Pilot Studies		0
Demonstration		0
Evaluations	10.0%	
Planning Projects	20.0%	
Dissemination Projects	10.0%	

Office of Planning, Budgeting and Evaluation
Office of Education, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH

0 FY '73 Funding: \$18.3 million

0 Number of Programs or Projects Active in FY '73: 34

0 Mission and/or Functions in Adolescence Research:

This office has primary responsibility for the planning, budgeting and evaluation of overall Office of Education programs and provides guidance and coordination for Deputyships in these activities, and in establishing objectives. OPBE prepares analytical studies necessary for the planning of educational policies and specifies the kinds of information to be collected for the evaluation of Federal programs in elementary, secondary, post-secondary, vocational, and special education. OPBE also prepares program memoranda, special studies, and analyses supporting the OE five-year program and financial plan.

0 FY '73 Distribution of Research by Area (Categories are not mutually exclusive. One study may involve several of the areas listed.)

15% or below*

Handicapped
School-community
interface
Vocational/technical
education
Social-emotional growth
and development
Delivery systems

16% - 39%

Implementation
Cognitive growth
and development
Disadvantaged
Planning-research
goals

40% or above

Special
characteristics

*Where no research was reported within a category, the name was not included.

Office of Planning, Budgeting and Evaluation
Office of Education, DHEW

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH (continued)

Distribution of Research by Kind of Research in FY '73
(Categories are mutually exclusive,)

Basic Research	0	
Applied Research	5.9%	
Development		5.9%
Pilot Studies		0
Demonstration		0
Evaluations	76.5%	
Planning Projects	8.8%	
Dissemination Projects	8.8%	

U.S. Department of Agriculture

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH

0 FY '73 Funding: Not available at this time

0 Number of Programs or Projects Active in FY '73: 98

0 Mission and/or Functions in Adolescence Research:

The purpose of the Department of Agriculture is to acquire and diffuse useful information on agricultural subjects in the most general and comprehensive sense. The Department's functions encompass research, education, conservation, marketing, regulatory work, agricultural adjustment, surplus disposal, and rural development. Research goals of relevance to adolescence include improving the dietary situation, the nutritional health, the levels of living and the home management practices of families in the United States. In addition, studies are conducted in the areas of occupational and educational goals and programs, personal stability and social adjustment, learning processes, generational values, and school achievement.

0 FY '73 Distribution of Research by Area (Categories are not mutually exclusive. One study may involve several of the areas listed.)

15% or below*

Delivery systems
School-community
interface
Vocational/technical
education
Career education
Planning-research
goals
Methodology
Measures development
Educational innovation
Implementation

16% - 39%

Cognitive growth
and development
Physical growth
and development
Special
characteristics
Global approach

40% or above*

Social-emotional
growth and
development
Influence of
family
Nutrition
Disadvantaged

*Where no research was reported within a category, the name was not included.

U.S. Department of Agriculture

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH (continued)

Distribution in Research by Kind of Research in FY '73
(Categories are mutually exclusive.)

Basic Research	44.9%
Applied Research	48.0%
Development	13.3%
Pilot Studies	1.0%
Demonstration	1.0%
Evaluations	7.1%
Planning Projects	0
Dissemination Projects	0

Manpower Administration
U.S. Department of Labor

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH

0 FY '73 Funding: \$2.4 million

0 Number of Programs or Projects Active in FY '73: 53

0 Mission and/or Functions in Adolescence Research:

The Department of Labor is charged with administering and enforcing statutes aimed at promoting the welfare of wage earners, improving their working conditions and advancing their opportunities for profitable employment. The major objectives of the Manpower Administration, whose research is reported here, are on developing and operating training and work experience programs for the unemployed and pursuing efforts to improve the efficiency of the labor market in matching workers with suitable jobs. The Manpower Administration research program focuses on these areas and includes studies related to the accomplishment of economic growth, minimizing unemployment and raising work skill levels.

0 FY '73 Distribution of Research by Area (Categories are not mutually exclusive. One study may involve several of the areas listed.)

15% or below*

Influence of family
Delinquency
Handicapped
Methodology
Measures development
Global approach
Education innovations

16% - 39%

Cognitive growth
and development
Delivery systems
Career education
Implementation

40% or above

Social-emotional
growth and
development
Vocational/technical
education
Disadvantaged
Special
characteristics

*Where no research was reported within a category, the name was not included.

Manpower Administration
U.S. Department of Labor

FISCAL YEAR 1973 ACTIVITY IN ADOLESCENCE RESEARCH (continued)

Distribution of Research by Kind of Research in FY '73
(Categories are mutually exclusive.)

Basic Research	9.4%	
Applied Research	50.9%	
Development		17.0%
Pilot Studies		1.9%
Demonstration		9.4%
Evaluations	32.1%	
Planning Projects	5.6%	
Dissemination Projects	1.8%	

Analysis of FY '73 Research by Agency

The following agency research analyses are based on the individual tabulations on the preceding pages. These descriptions conclude this chapter.

Office of Child Development. OCD research deals with a wide range of issues related to the health, education and welfare of young people. Research was supported in more than 20 percent of the 76 OCD projects for the areas of social-emotional growth and development, the influence of family, and advocacy. However, the two areas of research that were reported most frequently were studies of service delivery systems (47%) and studies of adolescents with special characteristics (63%), many of whom were disadvantaged. OCD is concerned with the implementation of research--a fact illustrated by the significant amount (50%) of research in this area. With the global approach a factor in 12 percent of the work of OCD, this agency shows a major concern with ecological research. Most of the research is applied (78%), with a substantial number of development and demonstration projects (24% and 43% respectively). Four percent of the research is longitudinal.

National Institute of Child Health and Human Development

NICHD research is concerned with the basic developmental processes--studying physical, cognitive, and social-emotional growth and development (34%, 48%, and 44% of the work, respectively). Much of the work focused on the study of physical development deals with adolescent health/disease. The agency's interest in overall human development can be seen in the fact that most of the research is directed at all young people and not just those with special characteristics (36%). A global approach to research on adolescence is used in 18% of the work. The research is predominately basic (79%) with a substantial amount (17%) longitudinal in design.

National Institute of Mental Health. Much of the NIMH

research deals with the social-emotional and cognitive growth and development of adolescents (41% and 37% of the work respectively), especially as these issues relate to mental illness (schizophrenia, depression) and maladjustive behaviors, such as drug abuse and delinquency. The large amount of work on handicapping conditions (53%) consists mainly of studies of the emotionally disturbed. The adolescent is studied in relationship with his environment, as shown by the emphasis placed on the influence of the family, a factor in 32 percent of the projects, and in the amount of work using the global approach (10%). A smaller, but important, area of interest, is the development of measures and methodologies for research (5%). The majority of NIMH research is basic (58%) and 15 percent is longitudinal in design. However, activity in applied studies (29%) and evaluations (13%) indicate interest in other kinds of research.

Maternal and Child Health Service. MCHS is concerned with the special needs of the pregnant adolescent and those of her infant. The interest in the health of adolescent mothers is reflected in the 50 percent of MCHS activity dealing with physical development, including health. The delivery of health and welfare services is studied in 41 percent of the research, and the implementation of research in 31 percent. An area of particular interest affecting adolescents is nutrition which is included in 25 percent of the research. Twenty-two percent of the projects are concerned with social-emotional development. MCHS is strongly interested in longitudinal research, reporting a larger percentage than any other agency (25%). Most of the work is applied research, although a number of projects are evaluations (25%).

Social and Rehabilitation Service. SRS, in the Child Welfare Bureau and the Rehabilitation and Training Centers, conducts research on adolescents that is primarily aimed at investigating the social-emotional needs of adolescents (53%) and

the systems for delivering health and welfare services to them (33%). Programs and institutions related to protective services, vocational/technical education and nutrition are of concern. In addition, SRS reported more studies of delinquency services and problems than any other agency (31%). Handicapped or disadvantaged adolescents are the target population for most SRS research. The adolescent is studied within his family setting, as shown by the large percentage of the projects (30%) that consider the influence of the family. Almost half of the research is applied research (development, primarily); however, SRS also conducts basic research (20%) and evaluations (27%).

The National Institute of Education. NIE research covers a broad range of issues related to adolescence. Implications for adolescent growth and development may be derived from studies of cognitive development, represented in 41% of the work, and social-emotional development, represented in 29%. Education relevant to the adolescent and to his preparation for adulthood may be found in the research on educational innovations (22%) and on career education (18%). The effort to improve educational services is indicated by the substantial amounts of research on implementation and service delivery, 29% and 25% respectively. A key area of research, methodology and measures development, was the focus of 3% of the projects. NIE reported more research than any other agency for disseminating research information (over 14%).

Bureau of Education for the Handicapped. BEH research focuses on developing and demonstrating programs and materials to meet the special educational needs of handicapped people. This objective is reflected in the emphasis placed on the implementation of research (52%) and on delivery of services (17%). Sixteen percent of the projects report investigation of educational innovations, i.e., new techniques and approaches to education. Both the social-emotional and cognitive development of the handicapped adolescent are studied (in 17% and 31%

of the work, respectively). A smaller, but increasingly important area of research is advocacy, presently studied in 7% of the projects. The dissemination of information is the purpose of 14% of the work. Development and demonstration projects account for large portions of the research (39% for development, and 34% for demonstration).

Division of Plans and Supplementary Centers (Title III).

Title III research in adolescence in FY '73 was directed at the development (43%) and demonstration (50%) of exemplary educational programs. Table I indicates that educational innovations, such as cross-age tutoring and television instruction, are a factor in more than 40 percent of the work. Fifty-two percent of the projects are concerned with the school-community interface. The research deals with the cognitive and social-emotional development of adolescents in 23 percent and 34 percent of the work. Within these two areas, projects studying student leadership decision-making, and the development of student responsibility were funded. Most studies included youth with special characteristics (68%), such as the handicapped, the disadvantaged, the mentally retarded, and the gifted.

Bureau of Elementary and Secondary Education, Division of Bilingual Education. In the Division of Bilingual Education, research is directed at children with special characteristics (99%); that is, children whose native language is not English and most of whom are disadvantaged. An important area of research is investigating the school-community interface (99%). The development of a sense of cultural awareness and self identity is the goal of much of the work on social-emotional development (34%). Most of the research consists of demonstrations (88%) related to the education of bilingual children and incorporate teacher training and the development of bilingual curricula.

Bureau of Occupational and Adult Education. BOAE research is concerned with the career and vocational education of children, youth, and adults. The majority (96%) of the targeted population is disadvantaged. Primary areas of research are cognitive and social-emotional growth and development (85% and 84%, respectively), especially as these areas relate to the development of skills and attitudes important on the job. Vocational/technical education was a focus in 85 percent of the research, and career education in 82 percent. (There is substantial overlap between these two areas.) Areas under study include innovative educational techniques and investigations of school-community interface, each of which is involved in more than 16 percent of the research. The research consists, in large part, of demonstrations of vocational or adult education projects or their development.

The National Center for Educational Technology. NCET conducts research on the application of educational technology to a wide variety of educational needs. The focus of 50 percent of the work is the implementation of research findings. The majority of the projects involve television programming aimed at promoting cognitive development (40%). Specific programming was designed for the disadvantaged (20%) and members of minority groups (30%). Career education was included in 40 percent of the research for adolescents. One major new effort in the area of preparation for adulthood was the development of a series of educational television programs for adolescents on lifelong skills which will include instruction in child care, job finding, and consumer skills. The work consists of development projects (60%), evaluations (10%), planning projects (20%), and dissemination projects (10%).

Office of Planning, Budgeting and Evaluation. OPBE research consists primarily of evaluations of programs supported in other parts of the Office of Education (77%). Fifteen percent

of the studies involving adolescents are longitudinal in design. Areas of research include budget analysis, program effectiveness and planning of program objectives and guidelines. The needs of special populations are a factor in a number of studies. Four projects deal with handicapped youth, and ten with the disadvantaged. Many of the program evaluations include assessments of cognitive development (21%) and some include assessments of social-emotional development (9%).

The Department of Agriculture. USDA reports more research using the global approach (24%) and more research on the family (41%) than any other agency. These results reflect the emphasis placed on studying the adolescent within his family, his community and his economic and geographical environment. Rural poverty and the economic stability of farm families are major concerns of the USDA research, 40 percent of which deals with the disadvantaged. All aspects of adolescent development are considered as shown by the figures in Table 1 for the developmental processes: 30% for cognitive development, 38% for physical development, and 59% for social-emotional development. Much of the research in physical development is in the area of health. Various aspects of nutrition--practices, dietary requirements and services--are included in 40 percent of the work. The research is almost evenly divided between basic (45%) and applied (48%), with a significant amount of longitudinal research (19%).

The Department of Labor. The Manpower Administration of DOL conducts research aimed at increasing employment skills and opportunities of youth. Vocational/technical education and career education are included in 45% and 32% of the work respectively. The emphasis placed on job aspirations, attitudes towards work, and successful job adjustment is reflected in the fact that 59% of the projects report work in social-emotional development. Disadvantaged youth are the focus of 49% of the

projects. The application of research to services is reflected in the fact that 22 percent of the projects study delivery systems and 20 percent study implementation. Most DOL work is applied research (51%), which includes a large portion of development projects (17%). In addition, a substantial amount is in evaluations (32%).

In this chapter we have described and developed the research pertaining to adolescents conducted by Federal agencies in FY '73. An overview analysis of the effort by all agencies was presented, and descriptions and analyses, agency by agency, were included. The next chapter, dealing with agency plans for fiscal year 1974 will further elucidate the Federal activity in adolescence research.

CHAPTER III

SUMMARY OF PLANS AND PRIORITIES FOR RESEARCH ON ADOLESCENCE, FY '74

The preceding chapter provided information about the particular nature of the work of each agency and an analysis of the overall research picture in adolescence for FY '73. This chapter will first describe the anticipated adolescence research plans of each agency for FY '74. Next a summary and analysis of these plans will compare them with the statement of research issues and needs presented in Chapter I. The identification of areas which are relatively weak or strong can assist in developing recommendations for future research.

In addition to comparing agency plans at the general level with the statement of needs and priorities in Chapter I, detailed information is presented in Appendix A on some specific research questions within major areas. Appendix A indicates the plans of individual agencies on issues considered to be of current significance in research on adolescence.

Information about plans was obtained from documents provided by the agency. In some cases it was not possible to obtain complete documentation because of departmental reorganizations and/or reevaluations of research priorities, which were still ongoing in several agencies at the time of writing. When plans for the agency as a whole were not available, the following text indicates the activities to which the plans described do apply. For the National Center for Educational Technology, because of a reorganization within OE, no statement of plans was available at the time of writing. A general statement of direction was provided by the OE, Division of Plans and Supplementary Centers, but detailed plans were not available.

Office of Child Development

While certain aspects of research on youth formerly carried out at OCD may be undertaken in the future by the Office of Youth Development, future research related to youth either at OCD or OYD is expected to be carried out within the framework of developing means to promote more effective socialization of youth and to reduce the incidence of juvenile delinquency and other hazards and casualties in the young. The general strategy is to develop family and community-based networks of comprehensive programs for youth which can be organized into regional and national socialization systems. Socialization includes increasing the competence of youth to effectively manage school, work, and public social behavior.

Some proposed areas of research of the Office of Child Development related to or affecting adolescents are the following:

1. Child Development and the Family including:
 - a. The socializing effects and potential of family and school interface;
 - b. The interaction of families with institutions other than the school with respect to socialization; and
 - c. The effect of public policy and social trends on the family and developing child.
2. Children at Risk and the Child Welfare System including such topics as:
 - a. Minimizing the separation of children from families;
 - b. Developing constructive means of deinstitutionalization; and
 - c. Upgrading institutional care.
3. Television and Children including:
 - a. The role television plays in family relations and family social interactions;

- b. The role of television in forming children's attitudes about social stereotypes and the potential of television to present content which communicates the full range of human ability and accomplishment;
- c. How television content can be used to communicate to children, and encourage the performance of socially valued behaviors; and
- d. How the impact of current television programming can be moderated by utilizing other socialization agents (e.g. parents) to buffer or enhance television content.

National Institute of Child Health and Human Development

NICHD conducts and supports an integrated program of research into the sequential changes characteristic of overall individual development from the moment of fertilization through old age and death. This is an approach which cuts across disciplines and spans both normal and abnormal development. The Growth and Development Branch of Child Health Research began expanding its program on adolescent development in FY '73. The expanded program during FY '74-'78 will focus upon areas which include:

- 1. The biological mechanisms which trigger the onset of puberty and which regulate its course;
- 2. The relationship between physiological maturation, adolescent social behavior, and capabilities for performance;
- 3. Adolescent nutritional requirements;
- 4. Psychological transitions of adolescence;
- 5. Socialization and the development of attitudes and values; and
- 6. Influence of the family.

National Institute of Mental Health

In general the research emphases of NIMH with respect to adolescence are: 1) understanding the origins of and influences on behavior; 2) the development of attitudes toward the self; 3) the development of identity in adolescent and adult

roles; 4) the impact of social disorders on adolescents, and how feelings of alienation and rebellion develop; and 5) familial relationships and the social contexts in which adolescents attain positive relationships and orientations, in contrast to those which give rise to distrust, conflict, apathy, and pathology.

Examples of the FY '74 goals of the Center for Studies of Child and Family Mental Health at NIMH, while dealing with children at the lower limit of the adolescent age range, serve to expand the above list of general goals. (The function of the Center through its staff is to stimulate and facilitate research planning and coordination. It does not have contract money of its own.) Selected objectives include the following:

1. Stimulate and support projects that view children and families in terms of their strengths and potential, rather than in terms of individual or cultural psychopathology;
2. Stimulate and support projects that view children within a developmental framework to assure that the needs of children at different stages are appropriately served;
3. Support projects that view children within the total environment (or as a member of a social ecology; i.e., a family, school, community, cultural group, society);
4. Develop and support longitudinal research of families, not so much to study their life cycles as we have done in the past, but to assess the processes of how changes occurred in their social circumstances, and how these changes were related to changes in their behavior;
5. Develop and support projects which explore the commonality (rather than uniqueness) of behavior across social classes, so as to better understand the social-psychological impact of class on families (a disproportionate number of studies of families have been of lower class populations);
6. Support projects which develop and assess coordinated and effective means of delivering and obtaining health and mental health services, with emphasis on the provision of primary care within ready reach of all children;

7. Develop and support training models that emphasize family-centered approaches to prevention and treatment;
8. Develop and evaluate effective counseling services for adolescents designed to prevent the development of serious emotional problems;
9. Develop materials and models to prepare high school youth for marital and parental roles; and
10. Stimulate a contract to catalog and evaluate all mental health curriculum programs so that educators can "make sense" out of what is available.

Maternal and Child Health Service*

The yearly research plans of the Maternal and Child Health Service are made within the context of the following long-range areas of emphasis:

1. Health delivery systems for children;
2. The special needs of the pregnant adolescent girl;
3. The nutritional status of children in this country;
4. The utilization of paraprofessional health personnel;
5. The development of family planning as a component part of comprehensive maternal health services; and
6. The development of methodology and strategy for evaluation of health programs.

(One goal concerned with very young children and one related to health delivery systems for mothers are not listed; those concerned with research in general or those that will affect adolescents are included.)

In addition, the Report of the National Conference on Research in Maternal and Child Health (MCHS, 1973) summarizes the research priorities designated by authorities in this field which will influence research planning in the future. Many of the recommendations include the goals listed above; for example, ways to improve the provision of health services to mothers and children and the evaluation of the effectiveness of these

*MCHS is now the Bureau of Community Health Services, Health Services Administration

services. Specific problems in other areas include: the population covered under existing health insurance plans; the barriers to the use of existing health services; and the obstacles to planning and providing regional centers for mothers and handicapped children and youth. Some specific diseases and health problems recommended for study are adolescence in general, including growth and development, nutrition and pregnancy; child abuse, including prevention and earlier identification and management of the abused child and family; and hypertension in children and youth as a precursor for hypertension in adults.

Social and Rehabilitation Service

The planning of each agency in the Department of Health, Education and Welfare is closely linked to overall departmental goals and strategies. Agency plans are expected to contribute to these goals in accordance with a broad strategy outlined by the department. This is illustrated in the plans and priorities of the Social Rehabilitation Service which have been derived from two inclusive departmental goals: non-dependency and institutional reform. Two objectives within the non-dependency framework have relevance for adolescents. One is the objective to develop preventive mechanisms which identify the likelihood of people becoming increasingly dependent on others and losing freedom of choice; the other is to create the conditions necessary to achieve earning capacity, self-care, and freedom of choice. A major means of bringing about non-dependency is through institutional reform--the elimination of the obstacles arising from prevalent attitudes and practices of institutions. Institutional reform implies working with the institutions to assure that they are accessible, responsive and effective.

"Researchable" issues related to the non-dependency of children and young people include the following areas.

1. Reduction of the potential for out-of-home dependency among children, and prevention of unnecessary institutionalization through:

- a. Family planning;
 - b. Prenatal and postnatal care;
 - c. Early and periodic screening, diagnosis, and follow-up of children; and
 - d. Increased placement of children in a stable family setting.
2. Provision for alternative placement of the developmentally disabled who are presently institutionalized;
 3. Provision for increased independence of other severely disabled, such as the blind, deaf and spinal cord injured;
 4. Rehabilitation of addicts; and
 5. Prevention of institutionalization of delinquent youth.

Some specific areas for research included in the FY '74 plans for SRS are: (1) the development of viable alternatives to foster care (e.g., expandable adoption options) aimed at the prevention of family separation and institutionalization; (2) the development of case finding techniques to discover early warning indicators of child abuse and to study the cost-effectiveness of the delivery of protective services; (3) the provision of comprehensive health screening for children eligible for Medicaid (to age 21); (4) the development of methods of expanding services and improving service delivery for the severely disabled; and (5) the expansion of vocational rehabilitation programs for the blind, the deaf and the visually and aurally handicapped. In addition basic medical research will be carried out at 22 research centers which also focus on treatment and rehabilitation services for the disabled, the handicapped and the otherwise disadvantaged.

National Institute of Education

Recently adopted priorities (early December) for NIE allocation of new funds for FY '74 include the following:

1. Provision of essential skills such as reading, language development, writing, and arithmetic, to all citizens;
2. Improvement of the productivity of resources in the educational system;
3. Understanding and improving the relationship of education and work;
4. Development of problem solving capability in the educational system at the state and local levels; and
5. Increasing diversity, plurality and opportunity in American education.

Topics of research in which activity is likely to be started or continued cover career education, curriculum and instruction, technology and productivity, methodology, objectives and evaluation, dissemination and R & D personnel. Detailed plans for career education activities at NIE are included in Appendix A. Planning details in other areas were not available at time of writing.

Bureau of Education for the Handicapped

In the Bureau of Education for the Handicapped work will continue on the four objectives that were set in FY '71 and will focus attention on a fifth area. One of the 1971 objectives pertained to preschool aged children; the other four which include concern for adolescents are:

- 1) To assure that every handicapped child is receiving an appropriately designed education by 1980 (85% by 1978);
- 2) To assure that by the year 1977, every handicapped child who leaves school has had career educational training that is relevant to the job market, meaningful to his career aspirations, and realistic to his fullest potential;
- 3) To assure that all handicapped children served in the schools have sufficient trained personnel who are competent in the skills required to aid the child in reaching his full potential; and

- 4) To enable the most severely handicapped children and youth to become as independent as possible, thereby reducing their requirements for institutional care and providing opportunities for self-development.

The major emphases for the BEH Division of Research for FY '74 will be the re-examination and assessment of significant research issues within these goal areas. In addition a major effort will be given to the development of a management process to facilitate the responsiveness of the research program to needs identified in the field and in BEH programs.

For FY '74, resources not previously committed will be directed toward refining BEH research plans and initiating new projects consistent with already identified needs and those needs identified as most critical in the early stages of the planning process.

OE, Division of Plans and Supplementary Centers

Much of the budget of the ESEA Title III program for innovative and exemplary educational programs supports continuing projects. Due to the uncertainties of future funding, the \$13 million of uncommitted Title III funds for FY '74 will be used to promote the diffusion of already developed educational innovation on a national basis. To carry out this plan, ongoing exemplary programs that have been proven successful will be funded for purposes of national demonstration. Other programs may be funded for replication when sufficient local need can be proven.

OE, Division of Bilingual Education

The grants funded under ESEA, Title VII for bilingual education currently may be used for the following purposes:

1. Bilingual instruction (using two languages as mediums of instruction) in the regular school program;
2. Instruction in the history and culture associated with the students' languages;
3. Establishment of closer cooperation between school and home;

4. Early childhood education designed to improve the child's learning potential;
5. Adult education, particularly for parents of children participating in bilingual programs; and
6. Vocational-technical training and bilingual programs designed for part-time pupils, dropouts, or potential dropouts.

OE, Bureau of Occupational and Adult Education

The FY '73 research activities of the Bureau of Occupational and Adult Education reported in the previous chapter included development and demonstration activities related to vocational/technical education and to manpower development and training. The FY '74 plans described here come from the Office of Research and Development in BOAE and represent the planned expenditure of the Bureau's discretionary Vocational Education Research funds. The ORD plans suggest the range of concerns of all of BOAE. They will undergird existing efforts and should lead to the improvement or expansion of current vocational education programs including the following projected areas of study.

1. **Curricula Studies.**

Information is needed upon which to base curriculum planning and curriculum development activities. Studies will be supported to produce information:

- a) for the development of individualized and performance oriented curricula, including the state-of-the-art, effectiveness, cost, and cost-effectiveness information;
- b) for identification of emerging occupations and explication of curriculum and manpower needs for the area or areas;
- c) for the identification of a common core of basic skills for one or more occupational cluster areas.

2. **Disadvantaged, Handicapped, and Minority.**

Information is needed to improve vocational education and vocational education opportunities for disadvantaged, handicapped, and minority populations.

3. **Alternative Work Experience Program.**
Information is needed to improve and extend work experience programs. Applied studies will be supported to produce information that:
 - a) identifies more creative work experience approaches with business, industry, and community and civic organizations;
 - b) provides a basis for improving student and employer satisfaction in work experience programs;
 - c) clarifies legal and other barriers to work experience programs;
 - d) identifies alternative work experience programs and describes actual or projected costs and cost-benefits of the programs.
4. **Guidance, Counseling, Placement, and Student Followup Services.**
Comprehensive systems of guidance, counseling, placement, and followup services for students and adults need to be improved.
5. **Manpower Information and System for Education.**
Job, manpower, labor market, and demographic data are required by public, private, and proprietary educational administrators, planners, evaluators, curriculum developers, career counselors, teachers, and students. Manpower information needs to be current and appropriately presented if vocational education programs are to be responsive to existing and projected employment opportunities.

OE, Office of Planning, Budgeting and Evaluation

The OPBE FY 1974 Evaluation Plan continues the two principal objectives of prior years aimed at contributing to policy and program decisions. The first objective places primary emphasis on conducting national impact evaluations of major OE programs. The criteria for selection of those to be performed each year include:

1. Studies which will supply information for Congressionally mandated evaluation reports;
2. Studies which focus on the effectiveness of specific programs, as compared to those which provide for general data collection;

3. Studies which provide inputs to requests for upcoming legislative renewals;
4. Studies of programs which are of special current interest and policy concern to either the Congress, the Executive Office of the President, the Department of Health, Education and Welfare, OE or the general public;
5. Studies of major programs (high dollar value and/or impact on large target populations); and
6. Studies of programs which impact on OE, Education Division or Department objectives or priorities.

The second objective focuses on a wide range of evaluative and planning studies concerned with educational policy questions, issues and problems not answered by program impact studies. These studies subject the issues to analysis, collect relevant data and shed light on alternative choices to be considered. The studies are generally not specific to a particular program, but may lead to program formulation or legislative proposals. It should be noted that the studies in the plan are not the only mechanism for analysis of policy issues. The two educational policy research centers at Stanford Research Institute and Syracuse University conduct long-term programs of research in selected critical policy areas and also provide capability for a limited number of quick policy analyses.

Department of Agriculture

The general goals of the Agricultural Research Service used as a guide in research planning are the improvement of the dietary situation, the nutritional health, the levels of living, and the home management practices of families and individuals in the United States. Much of the program is oriented toward foods and nutrition. Basic information is developed to assist the conservation and optimum use of food resources to promote the nutritional well-being, health, and personal satisfactions of all people in the nation.

A major focus of this research is to obtain information on human requirements for nutrients and the ability of various foods to provide these nutrients. The goal of this research is to

provide a sound basis for dietary recommendations for normal individuals throughout their lives. One of the high priority risk groups in these studies includes the adolescent. The studies in this group will attempt also to identify the individuals or the groups of individuals in the adolescent age group who could benefit by an alteration or regulation of their dietary intake of various nutrients, to find out how these should be regulated, and to assess the potential benefits from dietary change.

The ARS also has the responsibility for nation-wide food consumption studies, not only for different population groups but among individuals of the same group. Research-based guidance materials are developed that relate to food budgets, dietary guides, and other aids to help families obtain better diets and make the most advantageous use of their monetary and time resources. Food budgets for families at different income levels and with children of different ages are developed, along with the more specific budget requirements for the children themselves.

The Food and Nutrition Service (FNS) conducts studies and surveys as well as nutrition education and training for the Child Nutrition Program of the USDA. Their studies include methodology to increase the effectiveness of child nutrition programs, evaluation or assessment of the impact of various food distribution programs, and the testing of new means of improving diets for children. Projects include evaluation of various new foods and food service delivery systems, food acceptance, and pilot studies on nutrition education.

The Department of Agriculture also supports research through the Cooperative Research Service and educational programs through the Extension Service. Major thrusts of the research program on adolescence for FY '74 largely carried out at the State experimental agricultural stations are nutrition and nutritional health of adolescents, educational and vocational aspirations and goals

of rural youth, occupational and residential mobility of rural youth, evaluation of career education, and educational and social performance of ethnic group youth.

Major areas of educational programming for youth by the Extension Service carried out by State extension services are in home economics, nutrition, and youth development. In carrying out its mission the Extension Service focuses on the following primary performances which are to:

1. Assist youth to become effective participants in the economic system and in preparation for career and job opportunities;
2. Assist youth in acquiring knowledge of scientific principles and application of technological skills;
3. Provide opportunities for personal growth and development and improved interpersonal relationships, including nutrition, health, and physical and mental well-being;
4. Involve youth in public decision-making processes, action, and service, and in development of effective community participation skills;
5. Develop skills of young people and adults for work with guidance of young people and for service to others; and
6. Provide major opportunities for the involvement of youth in decision-making and program determination roles in shaping the Extension 4-H Youth educational program for the years ahead at local, county, state, and national levels.

Department of Labor

The Department of Labor research reported for Chapter II is conducted within the Manpower Administration. The research and development activities carried out by the Office of Research and Development for the Manpower Administration focus on a number of areas. The research and development program of Title I of the Manpower Development and Training Act (MDTA) is focused primarily on finding practical solutions to manpower problems, with emphasis on economic objectives and the development of early solutions to newly emerging as well as continuing and persisting problems.

As the Federal role in the conduct of manpower programs shifts towards granting authority at local levels under Manpower Revenue Sharing (MRS), research and development objectives will correspondingly show increased emphasis on providing support to MRS operation. Research and development will increasingly aim at such supportive roles as assisting in identifying and developing information to guide local manpower planning and regional administration; strengthening of manpower institutions (particularly the Employment Service); and the development of new methods by experimentation on content and delivery of manpower services, program mixes, organizational models, and labor market intervention strategies that regional, state, and local authorities will need to consider in the planning, development, and administration of manpower programs.

The program of the Office of Research and Development (ORD) also includes activities incident to: (1) work experience and training programs funded under Title I of the Economic Opportunity Act; (2) the Work Incentive Program funded under Title II of the Social Security Act; and (3) the development of information and recommendations for the improvement of the Labor Market Information System as required under Section 106 of the MDTA.

The research program is directed toward the sponsorship of studies designed to meet manpower problems on a short-term or long range basis. Research funds are awarded to universities, research institutions and government agencies to conduct both basic and applied research on a wide variety of specific manpower issues and problems. Projects are selected for their program and policy relevance, and in consideration of the competence of the principal investigator. The studies selected are designed to anticipate economic and social trends for manpower planning purposes and to cope with the problems foreseen; to improve services, programs, and institutions concerned with manpower; to improve the productive potential of the population; and to assess major economic and social influences on the work force and population.

In FY '74 and FY '75 research and development support is expected to focus on the following priorities:

1. Developing and testing improved methods and techniques of providing manpower services;
2. Appropriate program mixes for specific client groups;
3. Optimal organizational patterns and structures at local levels;
4. Improved labor market information and projection techniques for improved planning and assessment;
5. Short and long run information on economic and social trends;
6. The dimensions, nature and changes in labor supply and demand;
7. The effects on manpower requirements, resources, development and programs of changes in the patterns and levels of economic activity;
8. Development of methods to enable effective assumption of responsibilities by state and local authorities in planning and administering manpower programs; and
9. Full utilization of research and development knowledge, findings and methods, particularly those that have policy or operational utility.

Early in its formative state ORD recognized the vital nature and significance of a utilization and dissemination function and created an organizational unit for its implementation. Under MRS, its function will be redirected to meet the needs of state and local manpower program administrators, planners, and evaluators. In addition, the utilization unit is responsible for working with operating agencies, such as the U.S. Employment Service and the Bureau of Apprenticeship and Training, to facilitate the adoption or adaptation of new research and development data and techniques. Emphasis in 1974 and 1975 will be on the development of activities in support of the utilization function, such as the following:

- 1) Experimentation with the development of utilization networks at local levels;

- 2) Development of more effective computerized storage and retrieval methods;
- 3) Development of methods to help local agencies and institutions use research and development findings and recommendations; and
- 4) Assessment of the feasibility of using skilled consultants to aid operating programs facilitate the utilization of its experiences and knowledge for replication.

In addition to administering the contract and grant research and development programs, ORD engages in internal research directed toward providing analyses of manpower issues and developing special reports on current manpower problems. Other ORD activities include preparing the Manpower Report of the President, and coordinating manpower research within the Department of Labor and with other agencies.

Summary of Agency Research Plans for FY '74

Using as a base the selected categories applied for the analysis of FY '73 data in the preceding chapter, which were derived from the statement of research needs in Chapter I, we can determine for these categories the major direction of agency plans for FY '74. (See Table 7.) These are of course merely representations of significant research areas pertaining to adolescence; research will be supported in additional areas as well and examples of other research emphases appear in Appendix A. Further, plans for research in any area correspond to stated agency priorities, but this does not necessarily preclude the funding of an appropriate proposal on a topic not presently stated in agency research plans. Also, it should be remembered that the indications in Table 7 and Appendix A of research in specific areas apply here only to adolescence and to substantial amounts of research activity. Agencies which also support early childhood research may fund work in additional or different areas and in many cases projects of importance may be funded by agencies and not appear in Table 7 because they are not part of a major trend or effort.

Table 7. Agency Plans for Major Research Effort in FY '74 by Research Area
(Categories are not mutually exclusive.)

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Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED.NIE	BEH	TITLE III*	BILING. EDUC.	BOAE	NCET*	OPBE	USDA	DOL
I. The Developmental Process														
Cognitive growth and development		X	X						X				X	
Social-emotional growth and development	X	X	X		X	X			X			X	X	
Physical growth and development		X	X		X								X	
II. Health and Welfare														
Nutrition		X	X	X									X	
Delinquency			X											
Advocacy and protective services			X				X							
Service delivery			X	X	X								X	

X = planned expansion of research in a given area or continuation at a substantial level of activity.

*Detailed plans not available at time of writing.

Table 7. Agency Plans for Major Research Effort in FY '74 by Research Area
(Categories are not mutually exclusive.)
(continued)

Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED.NIE	BEH	TITLE III*	BILING. EDUC.	BOAE	NCET*	OPBE	USDA	DOL
III. Preparation for Adulthood														
Family Influence	X	X	X			X							X	
Educational innovations			X			X	X		X	X				
School/community interface	X		X			X	X			X			X	
Career education			X			X	X						X	
Vocational/technical education			X			X	X			X			X	
IV. Global Approach	X	X	X		X	X						X	X	
V. Research Target Groups														
Children with special characteristics	X	X	X	X	X	X	X		X	X		X	X	X
Handicapped children		X	X	X	X		X			X		X		
Disadvantaged children		X	X	X	X	X			X	X		X	X	X

X = planned expansion of research in a given area or continuation at a substantial level of activity.

*Detailed plans not available at time of writing.

Table 7. Agency Plans for Major Research Effort in FY '74 by Research Area
(Categories are not mutually exclusive.)
(continued)

Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED.NIE	BEH	TITLE III*	BILING. EDUC.	BOAE	NCET*	OPBE	USDA	DOL
VI. Methodology		X	X	X	X	X			X			X	X	X
Development of measures		X	X			X							X	X
VII. Planning		X	X	X	X	X	X			X			X	
VII. Implementation (cont.)		X	X	X	X	X	X		X	X		X	X	

X = planned expansion of research in a given area or continuation at a substantial level of activity.

*Detailed plans not available at time of writing.

Table 8 shows that the largest single reported area that agencies plan to support is for research dealing with young people with special problems, needs or diverse backgrounds. All of the twelve agencies or programs will include such young people, with ten agencies supporting research on the disadvantaged and seven including handicapped children within their planned efforts. Thus half or more agencies will focus on disadvantaged and/or handicapped children, but only one agency out of 12 has major plans for research relating to delinquency. That agency is NIMH and their focus in this area is primarily on examining the influences and causes of anti-social behavior. The transfer of the activities of the Youth Development and Delinquency Prevention Administration from SRS to the Office of Human Development in FY '73 may result in more OHD research effort related to delinquency in FY '74.

The categories under Preparation for Adulthood account for a second major research effort planned for FY '74. For each area included in this category nearly half the agencies will support substantial activity. (See Table 7.) The areas are Vocational/Technical Education, Career Education, Educational Innovations, School-Community Interface and Family Influence. In considering these categories it should be remembered that career education and technical education projects may overlap and that school-community interface is in a sense an instance of attempted innovation in education.

The group of research categories referred to in Chapter I as general principles and approaches to research also show up strongly in the plans for FY '74. The greatest amount of planned activity in this group appears to be in the area of implementation. Here ten out of twelve agencies plan to support one or another of the aspects of implementation of research findings. Implementation includes studies of dissemination to other researchers, to practitioners, to parents and to planners, as well as utilization of findings in practical situations and the development of information systems and communications networks.

Table 8

Selected Areas in Which Agencies Plan to
Conduct Research in FY '74, by Number of Agencies
(Categories are not mutually exclusive)

N = 12*

Children with special characteristics	12
Disadvantaged children	10
Implementation	10
Methodology	9
Social-emotional growth and development	8
Planning	8
Global approach	7
Handicapped children	7
School-community interface	6
Educational innovations	5
Vocational/technical education	5
Family influence	5
Development of measures	5
Career education	4
Cognitive growth and development	4
Service delivery systems	4
Nutrition	4
Physical growth and development	4
Advocacy and protective services	2
Delinquency	1

*NCET and Title III programs are not included.

Planning activities such as goals development, literature reviews and professional conferences will be supported by eight agencies. Methodological studies will also receive attention in nine agencies and five of these agencies will include test and measures development. (See Appendix A for a breakdown of the kinds of methodological studies agencies are planning.) The global approach to research will receive special attention in seven agencies.

The two major categories which it appears will receive lesser overall support in FY '74 than the above are the Developmental Process and Health and Welfare categories. (See Table 7.) Each area in these categories, with the exception of one, will be the focus of substantial activity in only one-third or fewer of the reporting agencies. The study of cognitive growth and development and health and welfare service delivery, for example, will be emphasized in only four agencies. The exception is social-emotional growth and development which will be of primary interest in eight agencies in FY '74.

To review, the areas of research which the largest numbers of agencies will support in FY '74 are those related to the categories pertaining to preparation for adulthood (school, work, family); those dealing with general approaches and techniques of the research process (global approach, methodology, planning, implementation); and those concerned with a better understanding of the adolescent's social and emotional development. In addition, young people with special needs and problems will be the focus of major research in all agencies.

The areas in which our analyses indicate lesser agency activity planned for FY '74 are cognitive and physical growth and development and areas related to the health and welfare category. Within the latter, advocacy and protective services, nutrition, delinquency, and delivery systems will be studied by four or fewer of the agencies.

In broad outline the planning picture for FY '74 corresponds with the levels of activity in FY '73, described in the previous chapter. The results are not directly comparable but looking at Table 2 and Table 8 together shows the same areas are in the middle and low ranges of activity. Two major differences appear between FY '73 research activity and that planned for FY '74. There appears to be a noticeably larger amount of activity planned for this year in the social-emotional area and substantially more effort in planning, implementation, methodology and the global approach. Since the latter areas were identified in Chapter I as those needing additional research support, agencies are reflecting in their plans greater attention to selected priority research areas.

With regard to areas showing relatively small amounts of planned activity, the conclusion is not necessarily warranted that the amounts of activity are inadequate. First it must be taken into account that the research effort is directly related to the objectives and missions of the agencies whose work was included in this report and that the inclusion of additional programs can change the overall picture. Secondly, the nature of the research reported for each area must be understood along with its relationship with other areas. A better idea of the nature of planned research can be obtained from a study of Appendix A which outlines specific research issues contained within broader categories. The appendix serves as a supplement to the information presented in Tables 7 and 8. Its contents can also be measured against the yardstick of individual questions discussed within the broad priority areas presented in Chapter I. The detailed information found in Appendix A may be used by the Interagency Panel as an aid to guide consideration of the adequacy of planned research in major priority areas. Having concluded the description of agency research plans, we turn in Chapter IV to the consideration of the future of the Interagency Panel for Research and Development on Adolescence.

CHAPTER IV

PANEL PLANS FOR THE FUTURE FY '74 AND BEYOND

The Interagency Panel for Research and Development on Adolescence has a number of unique features which contribute to its current and potential effectiveness in achieving the overall goal of the Panel; i.e., coordination of research planning and funding by Federal Agencies concerned with adolescence. These unique features include: (1) a current record of all on-going Federally funded research on adolescence within the Information System; (2) a capacity to address interagency questions needing Federal policy; (3) the ability to provide information on research analyses and needs for use by all member Agencies; (4) a relationship with the Interagency Panel on Early Childhood Research and Development to address the total age spectrum as it has meaning for Federal research efforts; and (5) the opportunity to organize special meetings with non-Federal groups and researchers for exchanges of knowledge and concerns relevant to interagency planning and funding of research on adolescence. Each of these features is discussed in terms of present as well as future activities.

Information System. The Information System, which contains abstracts on all on-going and newly initiated research from each member agency, provides a resource for future activities of the Panel. Some of these activities will be: (a) an analysis of research information around specific subject areas or target groups to provide member agencies with focused information for planning; (b) print-outs of selective research information upon request of member agencies; (c) search privileges by staff of member agencies to use the

software of the Information System for study and planning. This System is the only one lending itself to such uses and the limits of utilization are set mainly by limits in our imagination.

Interagency Questions. The Panel will continue to explore questions of interagency significance which help agencies formulate policy. One of these questions concerns the problem of cross-research analyses. Researchers frequently conduct their research, especially in the behavioral sciences, with independent definitions or constructs of variables and with self-developed or new measurement instruments. These activities are quite appropriate but limit the ability to compare research findings because of such individualized definitions and constructs. To increase the possibility of cross-research analyses the Panel is discussing at the Federal level and with professional organizations appropriate policy to insure the possibility of cross-research analyses. A task force will address this problem and provide recommendations for policy decisions. One activity that will be undertaken is an analysis of data in the Information System around specific topics to determine the range of discrepancies in definitions of marker variables and marker measures. This kind of information will highlight the problem for the Agencies as well as for the research community.

Research Analyses. The Panel will continue to analyze research activities, needs, and issues around topics of concern to Panel members and state-of-the-arts documents will be produced as requested.

Developmental Continuity. The Panel has a formal relationship with the Interagency Panel on Early Childhood Research and Development. All minutes of meetings, all reports and documents are shared by both Panels. The Panels have common agreements on policies for utilization of the Information System and use the same classification system for abstracting research information. Both Panels organize

the annual reports in the same format so that comparisons are easily made. The Panels are addressing the problem of marker variables and marker measures jointly and will agree on a common policy.

Increasingly, analyses will be made of research activities that span the entire age range included under the Panels so that future Agency planning may reflect the developmental continuity of children and youth.

Non-Federal Interaction. The Panel organizes meetings around specific topics and areas of concern to which it invites non-Federal specialists and professional organizations for the exchange of information. Reports of these meetings are published and become working documents for the Agencies. The Panel will continue to organize such meetings and publish working documents that consist of the proceedings and recommendations resulting from the meetings. Areas will be selected as the Panel determines.

The Interagency Panel for Research and Development on Adolescence has accomplished an inordinate amount of work during its first year. In many ways it benefitted by the experiences of the Interagency Panel on Early Childhood and Development. The course of the Panel is set to accomplish in a variety of ways the purpose of the Panel; i.e., coordination of research planning and funding by Federal agencies concerned with adolescence.

APPENDIX A

DETAILED AGENCY PLANS FOR ADOLESCENCE RESEARCH

IN FY '74

Examples of Research Areas to be Studied by Agencies

Key

S = Same level of activity

+ = Increased activity

- = Decreased activity

0 = Little or no activity

**No symbol = Box was not marked by reporting agency,
except for NCET and Title III for which
detailed plans were not available and
not reported.**

I. The Developmental Process

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Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED.NIE	BEH	TITLE III*	BILING EDUC.	BOAE	NCET*	OPBE	USDA	DOL
A. Cognitive Development	0	+	S		0		0		S	0			S	0
1. Perception	0	+	S		0		0		S	0			S	
2. Learning	0	+	S		0		0		S	0			S	
3. Concept Formation	0	+	S		0		0		S	0			S	
4. Abstract Thinking (includes all higher thought processes)	0	+	S		0		0		S	0			S	
5. Creativity	0	S	S		0		0		S	0			S	
6. Language	0	+	S	S	0		0		S	0			S	
B. Social-Emotional Development	+	+	+		+	+	0		S	0		+	S	0
1. Identity Formation (role development)	0	+	+		S		0		S	0		+	S	
2. Self-Concept (including self- worth and self-respect)	0	+	+		-	+	0		S	0		+	S	
a. Body image	0	+	+		-		0		S	0			S	

*Detailed plans not available at time of writing.

I. The Developmental Process (cont'd)

Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED.NIE	BEH	TITLE III*	BILING. EDUC.	BOAE	NCET*	OPBE	USDA	DOL
3. Empathy, Reciprocity in Interpersonal Relationships	0	S	+		S		0		S	0			S	
a. Values development	0	S	+		S		0		S	0			S	
4. Dependence/Independence (including self-reliance)	0	+	+		S		0		S	0		+	S	
a. Responsibility	0	+	+		S		0		S	0			S	
5. Alienation/Adjustment	0	+	+		S		0		S	0		+	S	
6. Sexuality/Intimacy	0	+	+		-		0			0			S	
7. Achievement	0	+	S		+	+	0		S	0		+	S	
8. Hostility/Aggression	0	+	+		+		0			0			S	
9. Motivation	0	+	S		+	+	0		S	0		+	S	
10. Coping Mechanisms (including self-management)	+	+	+		+		0			0		+	S	

* Detailed plans not available at time of writing.

I. The Developmental Process (cont'd)

Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED.NIE	BEH	TITLE III*	BILING EDUC.	BOAE	NCET*	OPBE	USDA	DOL
C. Physical Development	0	+	+		0		0			0			S	0
1. Sexual Development (including sexual maturity, puberty)	0	+	+		0		0			0			0	
2. Physiological Change	0	+	0		0		0			0			0	
3. Endocrinological Change	0	+	0		0		0			0			0	
4. Anthropometric Change	0	S	0		0		0			0			0	
D. Gender Differences in Development and Behavior	0	+	+		0		0			0			S	0

*Detailed plans not available at time of writing.

II. Health and Welfare
(Study of Causes/Effects/Prevention/Treatment)

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Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED:NIE	BEH	TITLE III*	BILING EDUC.	BOAE	NCET*	OPBE N=34	USDA	DOL
A. Genetic Influences	0	+	S		0		0			0			0	
B. Pre-Birth and Early Environmental Events	0	+	S		0		0			0			0	
C. Family Planning; Contraception	0	+	S	S	S		0			0			0	
D. Care in Pregnancy (includes pre- and post-natal care)	0	+	0	S	S		0			0			S	
E. Abortion	0	S	S		S		0			0			0	
F. Venereal Disease	0	0	0		S		0			0			0	
G. Accidents	0	S	S		S		0			0			S	
H. Suicide	0	0	S		S		0			0			0	
I. Crisis Intervention Program	0	0	S		S		0			0			0	
J. Counseling/Therapy (mental health and behavior problems)	0	0	S	S	S		0			+			+	

* Detailed plans not available at time of writing.

II. Health and Welfare (cont'd)
(Study of Causes/Effects/Prevention/Treatment)

Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED.NIE	BEH	TITLE III *	BILING EDUC.	BOAE	NCET*	OPBE	USDA	DOL
K. Drug Abuse	0	0	S	S	+		0			0			0	
L. Other Delinquency and Crime Prevention/Treatment	0	0	S		-		0			0			0	
M. Institutional Care	0	S	S		-		+			0			0	
N. Nutrition	0	+	S	+	0		0			0			+	
O. Service Delivery	0	0	S	S	S		0			0			+	
P. Legal Rights and Responsi- bilities of Young People	0	0	S		-		0			0			0	
1. Voting	0	0	S		-		0			0			0	
2. Reform of Courts and Juvenile Justice System	0	0	S		-		0			0			0	
3. Police and Youth	0	0	S		-		0			0			0	
4. Rights and Responsibili- ties of Students	0	0	S		-		0			0			0	
5. Military Service	0	0	S		0		0			0			0	

* Detailed plans not available at time of writing.

III. Preparation for Adulthood

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Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED.NIE	BEH	TITLE III*	BILING EDUC.	BOAE	NCET*	OPBE	USDA	DOL
A. Family, Peer and Community Influences	+	+	+		-	+	0			0			+	
1. How Family Characteristics (e.g., size, stability, cultural values) Affect Development	+	+	+		0		0			0			+	
a. Effects on adolescents of different kinds of parenting skills	S	+	+		0		0			0			0	
2. Influence of Non-Family Adults on Development	0	S	+		-	+	0			0		+	S	
3. Influence of Peers on Development	0	+	+		-	+	0			0		+	S	
4. Effects of Alternative Life Styles & Social Structures	+	+	+		-	+	0			0			S	
a. Changing role of the family in U.S. society and its effects	+	+	+		-		0			0			S	
b. Youth cultures (hedonism, complacency, protest)	0	+	+		-		0			0			0	
5. Effect of Community or Neighborhood Environmental Conditions	+	S	S	S	-	+	0			0		+	S	

* Detailed plans not available at time of writing.

III. Preparation for Adulthood (cont'd)

Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED.NIE	BEH	TITLE III *	BILING EDUC.	BOAE	NCET*	OPBE	USDA	DOL
6. Effect of Professional Groups or Institutions in the Community	+	S	S		-		+			0			0	
7. Change in Institutional Structure	+	0	S		-	+	0			0			0	
B. Education (inside and out- side school system)	0	S	S		0	+	S		S	+			S	S
1. School Systems	0	S	S		0		+		S	+			S	
a. Innovative systems, methods of education	0		S		0	+	+		S	+			0	
b. Student participation	0		S		0	S	0		S	+			0	
c. Equal educational opportunity	0		S		0	S	+			+		+	0	
d. Humanization of school systems	0		+		0		0			+			0	
e. Interface of school and community	0		S		0	S	S			+			+	
f. Curriculum or course development	0		S		0	S	+			+			+	S

* Detailed plans not available at time of writing.

III. Preparation for Adulthood (cont'd)

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Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED. NIE	BEH	TITLE III*	BILING EDUC.	BOAE	NCET*	OPBE	USDA	DOL
g. Organization and management	0		S		0	S	0			+			S	
2. Alternative Programs, Methods of Education (outside the school system)	0	S	S		0	+	+			+			S	S
a. Employer-based	0	S	S		0	+	+			+			0	
b. Community-based	0	S	S		0	S	+			+			S	S
c. Youth volunteers	0	S	S		0		0			+			0	
d. Cultural exchange	0	0	S		0		0			0			0	
e. Youth-managed institutions	0	0	S		0		0			+			0	
3. Areas of Instruction (in or out of school)	0	0	S		0	+	0		S	+			S	S
a. Academic studies	0		0		0	S	0		S	0			+	
b. Basic education (reading, arithmetic, spelling, writing)	0		0		0	S	0		S	0			0	S
c. Physical education	0		0		0		+			0			0	

* Detailed plans not available at time of writing.

III. Preparation for Adulthood (cont'd)

Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED. NIE	BEH	TITLE III*	BILING EDUC.	BOAE	NCET*	OPBE	USDA	DOL
d. Sex education	0		S		0		0			0			0	
e. Drug education	0		S		0		0			0			0	
f. Training adolescents for parenthood or family roles	0		+	S	0		0			-			S	
g. Training for citizenship and community participa- tion	0		S		0		0			-			+	
h. Training for use of leisure time	0		S	S	0		+			-			+	
i. Religious education	S	0	S		-		0			0			0	
j. Development of cultural, esthetic interests	0		S		0		0			-			S	
k. Cross-age tutoring or counseling	0		S		0		0		S	+			0	S
l. Accreditation	0		0		0	+	0			+		S	0	S
m. Instruction by measur- able objectives	0		0		0		0		S	+			0	

* Detailed plans not available at time of writing.

III. Preparation for Adulthood (cont'd)

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Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED.NIE	BEH	TITLE III*	BILING EDUC.	BOAE	NCET*	OPBE	USDA	DOL
n. Criterion referenced assessment	0		0		0	+	0		S	+			0	
o. Individualized instruction	0		0		0	S	0		S	+			0	
p. Television instruction	0		S		0	+	0		0	0			0	
q. Computer instruction	0		S		0		0			0			0	
r. School size	0		0		0		0			0			0	
C. Employment	0	0	0		+	+	0			+			S	
1. Pre-Vocational Training, (i.e., work awareness, orien- tation, and/or exploration)	0		S		0	+	+			-			0	S
2. Career Education	0		S		0	+	+			-			+	
3. Vocational/Technical Educa- tion or Training	0		S		0	S	+			+			+	
4. Cooperative Education	0		S		0	S	0			+			0	
5. Work-Study Programs	0		S		0	S	+			+			0	

* Detailed plans not available at time of writing.

III. Preparation for Adulthood (cont'd)

Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED.NIE	BEH	TITLE III*	BILING EDUC.	BOAE	NCET*	OPBE	USDA	DOL
6. Other Work Experience	0		S		0	+	+			+			0	S
7. Manpower Training	0		S		0	S	0			+			0	S
8. Job Training in Military	0		0		0	S	0			0			0	
9. Counseling and Guidance	0		0		+	+	0			+		+	S	S
10. Placement and Follow-up	0		0		+	+	0			+			0	S
11. Study of National and Local Job Requirements	0		0		+	S	0			+			S	
12. Job Planning and Develop- ment on Community Basis	0		0		+	S	0			+			+	
13. Political and Organizational Dynamics and Effects of Work Programs	0		0		+		0			+			0	
14. Changes in the Law and New Laws on Youth Employment	0		0		+	S	0			+			0	

* Detailed plans not available at time of writing.

IV. The Global Approach

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Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED.NIE	BEH	TITLE III *	BELING EDUC	BOAE	NCET*	OPBE	USDA	DOL
A. Whole Child; Must Include Two of the Three Aspects of Development	0	+	+	S	+		0			0			S	
B. Ecological Studies; Study of Effects of Interacting Variables in Life Space or Intervention Programs	+	S	+		+		0			0			S	
C. Combined and/or Comparative Effects of Intervention Programs	0		S		+	+	0			0		+	S	

* Detailed plans not available at time of writing.

V. Research Target Groups
(Children Representing a Variety of Abilities, Backgrounds, and Problems)

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Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED.NIE	BEH	TITLE III*	BILING EDUC.	BOAE	NCET*	OPBE	USDA	DOL
A. Gifted	0	S	S		0	S	0			S			0	
B. Average Ability	0	+	S		S	S	0			S			S	
C. Disadvantaged	0	+	+	S	+	S	0		S	+		+	+	S
D. Handicapped (mentally, emotionally, physically)	0	+	+	S	+		+			+		+	0	
E. Mentally Retarded	0	+	S	S	S		S			+			0	
F. Learning Disabled	0	+	S		S		S,			+		+	0	
G. Chronically Ill or Hospitalized	0	S	S	S	S		S			+			0	
H. Delinquents	0	0	S		-		0			S			0	
I. Criminal Offenders	0	0	S		-		0			S			0	S
J. Pregnant Unwed Mothers	0	+	S	S	-		0			S			0	
K. Teenage Parents	0	+	S	S	-		0			S			0	

* Detailed plans not available at time of writing.

V. Research Target Groups (cont'd)
(Children Representing a Variety of Abilities, Backgrounds, and Problems)

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Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED.NIE	BEH	TITLE III*	BILING EDUC.	BOAE	NCET*	OPBE	USDA	DOL
L. Drug Addicts	0	S	S	S	-		0			S			0	
M. Runaways	0	S	S		+		0			S			0	
N. School Dropouts	0	S	S		S	S	0		S	S		+	0	S
O. Minority Ethnic Groups	0	S	+	S	S	+	0		S	+		+	S	S
P. Males	0	+	S	S	S	S	0		S	S			S	
Q. Females	0	+	+	S	S	S	0		S	S			S	
R. Ages 10-14 or Early Adolescence	0	+	+	S	S	S	0		S	S			S	
S. Ages 15-19 or Middle Adolescence	0	+	+	S	-	S	0		S	S			S	
T. Ages 20-24 or Late Adolescence	0	+	+		-	S	0			S			0	
U. General	0	+	+		-	S	0			S			S	

* Detailed plans not available at time of writing.

VI. Research on Methodology

Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED.NIE	BEH	TITLE BILLING III*	BOAE	NCET*	OPBE	USDA	DOL
A. Program Evaluation Procedures for Analyzing Complex Situations Containing Many Variables	0	S	+		S	+	0		0		+	+	
B. Program Evaluation Methods Which Measure the Relation of Specific Inputs to Specific Performance Outputs	0	S	S	S	S	+	0	S	0		+	S	
C. Systems to Insure That the Criteria Used to Measure Success Are Relevant to Program Characteristics	0	0	S		S	+	0	S	0		+	0	
D. The Refinement and Development of Techniques of Carrying Out Behavioral Observations in Natural Ongoing Situations	0	S	+		S	+	0	S	0		+	0	
E. Methodology of Longitudinal Research	0	S	+		-		0		0			+	
F. Development of Marker Variables	0	S	+		S	+	0		0			S	
G. Test and Measures Development	0	S	S		-	+	0	-	0			+	S
H. Evaluation in Affective Domain	0	S	+		-	+	0		0			0	

* Detailed plans not available at time of writing.

Areas of Research	OCD	NICHD	NIMH	MCHS	SRS	CAREER ED.NIE	BEH	TITLE III*	BILING EDUC.	BOAE	NCET*	OPBE	USDA	DOL
A. Planning Interagency Research	0	S	S		S		0			0			S	
B. Conferences or Studies Relating to Federal Research Needs and Goals	0	S	+	S	+		+			+			+	
C. Studies of Goals for Adolescent Development and Preparation for Adulthood	0	+	S		S	+	0			0			S	
D. State-of-the-Art Reviews	0	S	+		+	+	+		S	0			S	
E. Studies of Diffusion, Dissemination and Utilization of Research Results	0	S	+		+	+	+		S	S			S	
1. Other Researchers	0		+		S	+	+		S	0			S	
2. Schools and Teacher Training Institutions	0		S		S	+	+		S	0		+	S	
3. Other Practitioners	0		+	+	+	+	+		S	0		+	S	
4. Parents and Other Lay People	0		+		+	+	+		S	0		+	S	
5. Policy and Program Planners	0		+		+	+	+		S	0		+	S	
F. Development of Information Collection, Processing and Analysis Systems, and Communications Networks (feedback systems)	0	S	S		+	+	0			0			+	

* Detailed plans not available at time of writing.

APPENDIX B

**SUMMARY OF ACTIVITIES OF
SPECIAL INTEREST GROUP CONCERNED
WITH MARKER VARIABLES**

SUMMARY OF SPECIAL INTEREST GROUP ON MARKER VARIABLES

Early during the period of the exploration of longitudinal research designs, the Early Childhood Panel, and later the Panel on Adolescence, recognized a strong need to develop some sort of alignment methodology to facilitate the comparison of the results from different research efforts. It was felt that too many studies yield results that are neither cumulative nor generalizable, thus necessitating an unreasonable number of replication studies before the findings can be translated into sound recommendations or programs that have a bearing on immediate social problems and are responsive to a wide variety of groups. To study these issues, a Special Interest Group on Marker Variables was formed.

The "marker variable" approach was adopted as having a potential benefit for a wide variety of groups. Although the development and implementation will require the cooperative efforts of a broad range of institutions and individuals, the considerations of this point have been made in line with the needs of the Federal agencies and researchers concerned with cross-study comparisons. Eventually, it is hoped that contributions will be made by research consumers and persons concerned with programs in process, especially those in educational institutions in order to make the effort a complete success.

As of this report, the Special Interest Group defines a marker variable as a variable representing a pertinent physiological phenomenon which facilitates comparison of cross-study results by providing a common base. The estimation of the marker variable is made through the use of a marker measure, for example, a psychological test or physical measure.

The Special Interest Group on Marker Variables has been involved in exploring the feasibility of the development of a system of marker variables as a means by which greater comparability between research studies can be achieved. The Group is interested in marker variables as one strategy to gain more consistency and comparability among research findings concerning children and adolescents, while recognizing that other approaches are worthy of consideration, e.g., the encouragement of collaborative studies.

The following points, suggestions and considerations have emerged from a series of meetings with consultants having expertise in a wide variety of research areas:

1. The use of marker variables might best be interpreted as a strategy or tactic, rather than a solution to current problems in the field.
2. Researchers need not only to identify instruments that are suitable as "markers" but also to develop the overall strategy or process necessary for their effective use. The task at hand involves more than recommending a list of marker variables. A good deal of work on the standardization of the methodology and conditions related to the administration of those measures is necessary.
3. Marker variables and marker measures should be distinguished. Not only must researchers determine which variables are significant enough to warrant their use as "markers"; they must also delineate marker measures, i.e., determine how the underlying processes in question can be measured reliably and consistently across variations in time, samples, age, and situations, and develop the instrumentation to accomplish this. Thus, problems of construct validity, population validity and ecological validity will have to be addressed within this effort to systematize research strategies and techniques.
4. Guidelines will have to be established which will indicate the appropriateness of the marker variable to various types of research. For instance, is the marker variable approach more useful for research at the field application level than at the level of ground-breaking, basic research? Related to this issue is the suggested distinction between "core" and "background"

measures. Core variables include those of prime concern to the investigator, while background measures include those used primarily to align the study with other research. It may be feasible for researchers to define and develop their own core measures, but at the same time, to include the data from background measures (marker variables) that will allow the results of their studies and of other studies to be interpreted meaningfully within a common framework.

5. More specific theoretical and methodological problems have to be faced in regard to the question of what variables and measures are most useful for a particular age group or research paradigm. Any serious attempt to develop a taxonomy of marker variables and measures is likely to result in a very large number of items that can contribute information relevant to a variety of research questions. Thus, there is also a great need for an effective strategy for selection of the particular variables that are most appropriate for any one area of research. Furthermore, guidelines for the choice of marker variables should be linked to recommendations for the use of those variables and the standardizing of testing conditions--a point touched on above. A persistent theme of the Special Interest Group discussions is that none of these suggested efforts to systematize research activities can be successful if undertaken independently, and that all of them should be dealt with as interrelated components of a broad program to coordinate research methods and measures.
6. The Special Interest Group feels that the use of marker variables and multiple variable approaches in general might facilitate the interpretation of various long-term developmental changes in intellectual or socio-emotional behavior. Often such changes are determined by single measures, and consequently, it is not clear whether a particular behavior reflects the same underlying process at different age levels. The use of multiple variable approaches would allow the investigator to examine more complex correlation patterns, rather than just single behavioral measures, and thus have the means by which to determine the nature of the construct being measured at different age levels.

7. Included in any attempt to develop a matrix of marker variables and a strategy for their use, should be efforts to deal with problems that might arise. For instance, will attempts to encourage comparability and standardization also lead to the use of obsolete assessment instruments? Will research findings "fall behind" emerging social problems and questions? Will standardization of measures and constructs be undertaken before the field or area has developed sufficiently?
8. In order to get a measure of a given marker variable with the least bias possible, among other considerations, the marker measure results should not be used in an evaluative context. This implies that the results of the measure which is used as an estimate of the marker variable would not be used in a pre-post analysis.
9. One idea which might be included is that of an "accuracy of comparison" continuum. The goal which one is trying to reach is that of being able to compare studies and relate the results of those studies. Marker variables, as represented by marker measures, supposedly allow these comparisons by providing estimates of common salient constructs and characteristics of the samples involved in the studies. It follows that the more points of comparison one has, the better the estimate of comparability, and thus, the "continuum". Unfortunately, there is a trade-off between gain in comparability, and expense of the estimate in terms of effort and costs. It will, therefore, be necessary to develop guidelines in implementing this system to optimize this trade-off.

The problem with regard to the development of the marker variable concept includes not only the development of the marker variables themselves and the problems surrounding this development, but also the process of implementation in the field of research.

Turning now to the approach toward implementation: it has become apparent that due to the complexity of the marker variable approach, the implementation process will have to proceed on multiple levels and at different rates. Initially, the mechanism for approaching the research field was to contact selected researchers from various fields for their suggestions, as well as their input into the development of the

concept and the approach. In addition to this, it is going to be necessary to approach the field at large through means of the journals of learned societies and discussion groups at the various conventions, such as the APA, AERA, and a number of others. Both of these are currently in progress.

Even at the present embryonic stage of development, it is apparent that the process will be exceedingly complex, and in some areas, the constructs underlying the potential marker variables are not yet clear, to say nothing of the marker measures necessary for estimation of the variable. In the process of development of the marker variable concept into a system with potential for wide implementation, key elements will be cooperation and coordination between the funding agencies, the research field, and public policy makers.

APPENDIX C

**SUMMARY OF ACTIVITIES OF
SPECIAL INTEREST GROUP CONCERNED
WITH WORK EXPERIENCE**

SUMMARY OF SPECIAL INTEREST GROUP ON WORK EXPERIENCE

The special interest group on work experience of the Interagency Panel for Research and Development on Adolescence grew out of a combined concern about the efforts of direct experiential learning on development as contrasted with traditional classroom learning, and the importance of preparing young people for earning a livelihood as adult members of society. These two issues were of interest as they related to the larger concern of investigating ways of assisting adolescents in making an effective transition to adulthood.

Precedent to the actual establishment of the group interested in the effects and ramifications of work experience, a special state-of-the-arts paper was prepared. This document, Work Experience as Preparation for Adulthood (summarized in Appendix D) describes the present range and character of Federal involvement in this area, analyzes research needs, and recommends some possible directions for research in the future.

In a July meeting of the Panel on Adolescence, a discussion of the state-of-the-arts document suggested that the work experience theme be further explored in a Special Interest Group. It was decided that it would be fruitful at the first meeting of the Group to review current theories on adolescent development in order to determine a conceptual framework within which research might take place. Consequently, Dr. Robert Grinder of Arizona State University was asked to discuss current theories of adolescent development and their relationship to programs for education, employment, health and welfare. Dr. John Hill of Cornell University was asked to discuss specific issues and questions relating to research on adolescence and the problems involved in carrying out such research. A major conclusion of this meeting was that research was badly needed on basic issues of adolescent development in the cognitive, physical, and socio-emotional areas,

and that a theory of adolescent development has yet to be developed. (See Chapter I for a review of the major issues raised at this meeting.) The following list of research priorities taken from Dr. Hill's paper suggests the range, variety, and importance of the recommended research on basic issues (Hill, 1973, pp. 89-96).

1. Foster basic programmatic research which relates directly to the major issues in psychosocial development during adolescence.

Much of the presently available information about development during adolescence is only incidentally related to the period, focuses on males instead of females, is cross-sectional rather than longitudinal, does not take seriously the diversity of adolescent setting and experiences, and is done in discrete and unrelated "chunks" rather than programmatically. Longitudinal studies of autonomy, achievement, intimacy, detachment, sexuality, and identity in both sexes are particularly needed at this time as they relate to childhood and adulthood roles and the primary changes of adolescence. The implications of the cognitive changes at adolescence for psychosocial development and for the role of pupil are, for example, grossly underexplored given their potential theoretical and practical relevance. Many other areas have been noted throughout the text above.

2. Foster basic and applied (demonstration, action, policy, and evaluation) research on the effects of organizations on adolescent behavior and development.

Of the three social networks within which adolescents function most of the time, most is probably known about peer groups, next most about the family, and least about larger organizations. The impacts of school, of church, of the military, of voluntary organizations, and of job settings on adolescent behavior and development is minimal. Most present knowledge is based upon informal observation and anecdote. Since policy and program planning for adolescents is likely to depend upon moderate-to-large organizations as major links

in the delivery system, there are sound practical as well as basic scientific reasons for learning about organizational impacts and the mechanisms which mediate them.

New assertions are made daily about the effects of the high school, for example, and about alternative schools, but no one really knows what those effects are on behavioral attitudinal, motivational, or even cognitive variables (save I.Q. and achievement test scores). Despite testimonials to the contrary, little is known about political socialization and citizenship in relation to adolescent organizational participation. What distinctive ties adolescents, as opposed to children and adults, might have with organizations does not appear to have been investigated. How organizational effects might interact with or be mediated by peer and parent effects have been explored only tangentially.

3. Foster basic and applied (demonstration, action, policy, and evaluation) research on various kinds of "health" education.

Programs of health education focusing on sex and drugs should be designed in which the research component is taken seriously. There are few instances of such programs actually yielding information which is useful in the design of successor programs, in the provision of basic information about sexual behavior and attitudes, in the formulation of social policy. Most, instead, contain evaluation research components which are limited in scope because their focus is on the effectiveness of the immediate program rather than upon the improvement of such programs in general. They often are not helpful about better ways of delivering educational services because they are not designed to contrast them. They do not reveal much about what kinds of adolescents benefit from given kinds of methods because they are not consciously designed to do so. The techniques used are more the most primitive ones behavioral science has to offer rather than better-developed ones: many times ratings are used which have

few practical advantages over the old-fashioned testimonial. Evaluation is included on a pro forma basis without being designed to yield helpful information. The investment of ten percent of funds for health education programs of this type in service efforts seriously designed to capitalize on their research components might well pay important dividends.

In the area of sex education, nothing seems to be known about the impact of sex education on sexual behavior despite the claims of opponents and proponents. There appears to be little information about the characteristics of health educators and their effectiveness in sex or drug information programs despite considerable speculation about demographic as well as attitudinal variables.

4. Foster research on socialization for work and family roles.

Socialization for the world of work is an ill-understood and understudied aspect of childhood and adolescence. While elements of the literature on identity formation, on achievement, on the peer culture, and on sex-role learning are relevant, the topic in its own right has received little attention. It is a particularly timely one at present given the widespread interest in the role of women in our society. Particularly needed in relation to social and educational policy would be studies of occupational modeling--the effect on girls of exposure to occupational models whose characteristics represent reversals of the usual "feminine" occupational choices and stereotypes. Both laboratory and (naturalistic, longitudinal) field studies need to be done of the determinants of occupational aspirations and of behaviors instrumental to career development.

Some programs of socialization for the world of work must be coordinate with or deal with issues on socialization for family roles as well. Since the combination of forces which leads to a woman placing a greater value on marital than occupational achievement is ill-understood, it is difficult to

be confident about policy formulations which it is said will differentiate the two roles and promote liberation.

Similarly, the role of males in this socialization process requires elucidation. A literature on father-daughter relationships in childhood or adolescence simply does not exist. The extent to which changing expectations of males for females during adolescence might modify marital-occupational preferences is unclear. Since alternative complementary work and family careers are a necessary concomitant of alternatives for women, studies of the socialization of males are also necessary.

5. Foster Research on the social perception of adolescence and its determinants.

Ambivalence toward adolescents in Western society has been remarked by many students of the period and social commentators. What are the sources of adolescent-inspired fear and anxiety in parents and non-parents alike? What accounts for the perpetuation of adolescent stereotypes and the preoccupation with strategies of control in dealing with adolescents? What are the consequences for adolescent development of variations in social perceptions of them? Are there differential rates of success for programs dealing with adolescents and youth as a function of adult attitudes and stereotypes? Can changes be effected in such social perceptions and, if so, what are their consequences for adolescent development and programs designed to facilitate adolescent development?

6. Foster the establishment of at least four university-based, regional centers of excellence in the study of adolescence.

The implementation of this recommendation would require bringing together sufficient research and training funds to augment existing resources at the chosen institutions. Institutions should already be expending some effort in the area and be able to use the new opportunities to build a visible and

strong research and doctoral training effort. The centers and their programs should be formally associated with a strong program in developmental or social psychology or in sociology lest the present tendency to set the period apart from the remainder of the life-cycle prevail.

The needs of the field suggest that high priority should be given to developing centers which would develop programs of: policy-related research; bio-behavioral research; and research on the impact of organizations on adolescents and adolescence. Each of the centers should have a balanced program of instruction but the research thrusts should be relatively few in number. The four centers should be diverse in administrative location within their home universities, in the kinds of research and training program offered, and in general orientation.

7. Foster the establishment of at least one, and preferably two, major research institutions devoted to programmatic, longitudinal studies of adolescence.

Many of the most important problems of adolescent growth and development require short- and long-term longitudinal research strategies to attain solution. Longitudinal studies require a mission-oriented setting if they are going to be successful. The planning must be extensive; there is frequently a long duration between initiation and output. The exigencies of the publication and tenure system and the autonomy ethic in the typical University department suggest that it is not suitable for this task. An independent research institute established expressly for the purpose would be more suitable. It probably should be loosely associated with a university, having access to library, computer, and other academic support services, but not have permanent staff members who are also university employees. Instead, fellowship opportunities should be arranged for senior scholars and pre- and post-doctoral research internships for junior scholars; in this way, the Institute would serve a training function as well.

Funding from the public sector might be employed for start-up costs and for segments of the research program. However, owing to the long-term commitment which longitudinal research entails, the core of the research program should be protected from fluctuations in public policy through private sector support (probably an endowment). It does not seem likely that the private sector would be unreceptive to such a proposal provided there was substantial support from a consortium of governmental agencies.

One of the meetings of the Special Interest Group on Longitudinal/Intervention Research of the Early Childhood Panel has relevance for the Group formed by the Panel on Adolescence. At this meeting representatives from the Department of Labor and the Census Bureau discussed the availability of data from a large-scale longitudinal study on adolescents in the labor market sponsored by the Department of Labor. The methodology of data gathering and the issue of access by researchers to this and other data files was the major focus of the discussion. One outcome of the meeting was the compilation of a catalog of computer-based information systems funded by Federal agencies, as an initial step in identifying appropriate data pools.

Having reviewed basic theoretical concerns and methodology in the above-mentioned meetings, the Special Interest Group on Work Experience was planning at the time of writing of this report another meeting in which members of the Interagency Panel whose agencies support projects dealing with work experience will come together to discuss the content and implications of their plans and programs. The meeting is to be organized around the following themes and questions relating to work experience:

1. Based on results and current Federal efforts, what are the changes they suggest in educational systems, businesses, unions and legal restrictions in the employment of youth?

2. How do Federal projects relate to the self development of the adolescent, especially with regard to skills not directly related to an occupation? Does direct experience in a real job setting increase motivation, responsibility acceptance, ability to take direction, to handle aggression and to work with others?
3. What can be ascertained about the value of work experience in terms of future employment? Does the content of work experience during adolescence relate to subsequent employment and does the adolescent move into the labor market with the necessary job skills and work attitudes?
4. Assuming occupational training based on work experience suitability has prepared youth for employment, what are the guarantees that jobs will be available? Is it possible to determine job availability and to match training to the realities of labor market?

Following the exchange of information about ongoing Federal efforts relating to work experience planned for this meeting, the Interagency Panel will have the background information necessary to determine the next steps for group action.



APPENDIX D

REVIEW OF SPECIAL REPORT:

Work Experience as Preparation for Adulthood:
A Review of Federal Job Training, Vocational,
and Career Education Programs, An Analysis
of Current Research, and Recommendations for
Future Research

Prepared by
Ellen Searcy

Summarized below are the purpose and conclusions of the special report, Work Experience as Preparation for Adulthood.

Objectives of the Report

The years of adolescence which see the young person making the transition from youth to adulthood are years in which crucial and often long lasting decisions are made--decisions relating to marriage, education and life work. Because of the importance of this period of development, the Interagency Panel for Research and Development on Adolescence has prepared a special report on one aspect of adolescent growth--the area of work experience as preparation for adulthood.

The Panel was interested in knowing the effect on adolescent development of actual experience in a real work situation. They wanted to know more about the kinds of learning that occur in situations outside the traditional classroom setting. They particularly wanted to know whether experiential learning in real life situations leads to the development of personality traits and social skills that are useful for success in life as well as success on the job. The practical purpose for which the information in this report is intended, is to identify areas of research need which may be of interest to member agencies. Having research needs identified will help agencies represented on the Panel make decisions about which areas to support, either on an individual or cross-agency basis.

In order to determine the range and direction of Federal involvement and hence possible research needs, it was decided to include descriptions of the programs providing some kind of actual work experience that are funded by Federal agencies. Then the ongoing research associated with these programs is reviewed to give a picture of the present situation with respect to certain selected program characteristics. The specific questions this report attempts to answer in the program and research review, are the following:

1. What kind of work experience does the program provide? What is the content and setting for learning?

2. What are the specific learning objectives of the program? Are they in writing or can they be reduced to writing?
3. How are the objectives and content related to academic or school learning, i.e., is school credit given for work experience?
4. Is there an attempt to match student needs (individual or group) with program goals, content, or method of instruction? If so, by what means?
5. Is there any measurement of behavior change resulting from the learning experience? If so, what is measured--academic learning, job skill attainment, work adjustment skills, personal and social characteristics?
6. What program-related research is ongoing, planned, or recently completed? What are the results, as reported?

The final chapter on research recommendations is based on both the program and research review and on a review of national studies pertinent to the subject of work experience.

One of the primary objectives of this report is to provide a working paper or reference to assist Panel members as they consider means of undertaking fruitful cross-agency research. The assumption is that knowing the characteristics of each agency's work experience or job training programs, as well as the kind of research each supports, will serve in helping to identify areas of mutual interest and those needing further investigation. In addition, because many of the work experience programs and related research are in the beginning stages, or, for the older programs, the research focuses on program evaluation, a state-of-the-art review of research alone, it was believed, would not have been of maximum usefulness.

Major Issues and Recommendations

In the program development area, a recommendation made with great frequency was that a statement of program and learner

objectives be made in measurable terms for instructional programs. The argument was that without such explication of objectives, meaningful program assessment is impossible and research to continuously improve programs has no objective basis. The kinds of learning expected to take place in work experience situations cover a broad and varied range of objectives. These include skills necessary for academic success and for competence in a specific occupation; skills that are generalizable to all jobs and information that is useful in the job market at large; learning that promotes maximum self-development in the cognitive, affective, and physical domains, and situations that encourage concern for the welfare of other individuals. Finally, the broadest of the work experience programs attempt to instill an awareness of, and an ability to, contribute to the successful functioning of social institutions, the community, and national efforts.

Statements of such objectives are beginning to appear in Federal program guidelines and requirements, but still more work is needed at the Federal level and particularly at the local level. Research funds need to include monies to provide assistance and support to local schools and organizations for the development of programs which include statements of objectives and a procedure for the validation of learning materials based on such objectives.

A fruitful area of research with regard to objectives, is that of investigating the kind of objectives that could be used as a meaningful core or superstructure for the derivation of specific learner or instructional sub-objectives. One such framework that might be studied is that propounded by the cognitive-developmental or interactionist psychologists. The various stages of a person's development, as defined in this theory, would represent the ultimate objective of instruction at each successive learning (or grade) level and the means of reaching each objective would include a broad variety of experiential learning activities. At lower levels of derivation

or development, several sets of objectives could be stated for each level, representing different viewpoints and approaches and providing alternatives to those responsible for setting educational goals and objectives.

Indeed, one of the most useful cross-agency efforts the Interagency Panel might undertake is the sponsoring of a project to produce alternative sets of educational objectives for an experiential approach to learning, centered upon work experience. Research already completed and reviewed here, that would be appropriate for consideration, is that of Coleman, Walther, and Kohlberg.

One of the basic needs is research to develop tests to measure personal qualities which broadly defined, cover social, emotional, and ethical development and more narrowly defined, include what have been called work adjustment skills or coping abilities. The latter may be thought of as lying along a continuum and becoming increasingly more specific to the work situation. At one end would lie such qualities as being able to work with others, in the middle perhaps, having the ability to plan work activities, and at the more work-specific end, being able to be at work on time and on a regular basis. Stating personal growth characteristics in behavioral terms makes valid measurement possible. The coping abilities and work adjustment skills, since they are more easily definable in behavioral terms, may be more easily measured. Methods to measure the growth of self-confidence or a more positive self-image or an increase in an interest and concern for other people, may present more of a challenge to the test developer, and stating their attainment in behavioral terms is the first step in the process.

Measures of such qualities are necessary to determine the full effect on the learner of work experience programs. Such tests are needed to provide empirical evidence for the rational belief that work experience helps to create self-confidence,

self-reliance and a sense of responsibility, and for students still in school, a higher tolerance for the school situation and a lessened tendency to drop out. Studies on the problem of school dropout have been reviewed, and efforts to develop tests to measure attitude change and personal development, discussed. The development of methods to measure the effect of work experience on the personal growth of the individual is one of the most important areas of need. Tests for competence in occupations and knowledge of the world of work also need to be developed. (For a comprehensive listing of occupational achievement tests, see Director of Achievement Tests for Occupational Education, Educational Testing Service, Princeton, New Jersey, 1971.)

The report of the Joint Commission on Mental Health of Children sums up the need for research on the effects of work on the psychological development of children:

Work is viewed as beneficial in terms of developing the adolescent's sense of self-respect, accomplishment and competency, the management of time, and sense of responsibility to outside authority, and as valuable in developing an overall appropriate understanding of and orientation toward work...However, there have been few studies that have investigated the psychological implications of early work experience, and we have yet to scientifically determine the effects.

The Commission stressed the need for a developmental theory of work which would be based upon a theory of adolescent growth and development. The Commission believes both basic and applied research are essential for the understanding of the process of adolescent development and the effect upon it of work experience. Basic research on the developmental characteristics and processes must precede or accompany the building of a developmental theory of work.

The need for reliable baseline data which can be used in making social policy decisions affecting young people is underlined in the paper Federal Youth Programs prepared for the Office of Management and Budget:

The lack of reliable data is a familiar problem to evaluators, but it is particularly striking when one attempts to cross-program comparisons. Neither 'costs' nor 'participants' are defined uniformly and few programs make any attempt to define 'benefits' with sufficient precision to allow adequate record keeping. Some of the largest programs are the least well documented. We are struck by how little can be said about such basic points as 'cost per participant per year' because published estimates for a single program may differ by 25 percent or more.

The paper recommends that "serious attention be given to the formulation of a core set of definitions pertaining to costs and enrollees for mandatory use by operating agencies." This recommendation is in line with the interest of the Interagency Panel in the definition of a common set of marker variables to be used by researchers in conducting and evaluating the results of their investigations.

The Panel on Youth of the President's Science Advisory Committee discussed a program of social experimentation related to a number of institutional changes that would assist young people in making the transition to adulthood. The Panel recommended pilot studies of the changes in order to obtain solid research information upon which policy decisions can be based. According to the Panel, prior experience should be gained "through explicit experimental design and systematic collection of data rather than in traditional casual ways."

Eric Stormsdorfer, basing his opinion on experience with the evaluation of manpower training programs and the Work Exploration and Career Education Program (WECEP), has also argued for pilot programs or demonstration projects with built-in experimental designs, to precede wide-scale adoption of new programs.

Since large amounts of scarce resources are involved, not the least of which is the student's time, and since the loss of good will of the society toward social and educational experimentation is a risk, it seems reasonable at this time to argue for an extensive use of pilot programs and relatively small

scale experiments in the area of action-learning rather than to argue for the immediate institution of a full scale program. With such an approach we might then be able to design a better program set and avoid the frustration, disillusionment and hostility which society has expressed toward some programs such as the Job Corps. Past evaluations of social and educational programs have depended almost entirely upon "natural" experiments. That is, once a program has been in operation for a year or so, a case study or sample survey analysis is instituted and, by means of a comparison group, one attempts to discover what the net effects of the program are. This is a valuable evaluation approach and should not be discarded. However, for a number of reasons, this approach is less effective than a pilot program or demonstration project with a built-in experimental design.

Among the advantages of pilot programs are that they permit the avoidance of self-selection bias, which occurs in natural experiments, and they provide the potential for studying a number of combinations of program inputs and directions of causality.

To continue with the report of the Panel on Youth, its basic premise is that the transition of youth to adulthood requires the meeting of broader objectives than those that can be achieved in schools alone. The report recommends newly shaped institutions to complement the activities of the schools as well as changes within the school structure itself. The proposals are made in the belief that diversity and plurality of paths to adulthood are necessary to meet the needs of youth and that schools alone cannot serve the needs of all students or even all the needs of some. In general, the institutional changes proposed place youth in a different role from that of student:

This different role involves either responsibility for his own welfare, or responsibility for others' welfare; it involves orientation to productive and responsible tasks; where it involves learning, it is learning through action and experience, not by being taught. Most of the proposed institutional structures also are designed to reduce the isolation of youth from adults, and from the productive tasks of society. This is intended both to bring about a

greater degree of personal responsibility of adults for the development of youth, and to remove from youth some of the insulation that impedes the transition to adulthood.

The institutional changes and alternatives proposed by the Panel to be the foci for social experimentation in small-scale pilot studies are summarized in Appendix G, as are the objectives of training for adulthood. The Panel also recommended that research be conducted on existing institutions, and the following are the research topics related to the school structure or to broader research issues they considered important.

1. We know very little about the cost of part-time work to academic achievement, or the returns from such work in terms of subsequent job availability and accumulated work experience. Several currently available bodies of data on the young, such as the National Longitudinal Surveys (Census-Ohio State), Youth in Transition (University of Michigan), and Project Talent data should be analyzed with such questions in mind.
2. The benefits and costs of interrupting schooling are not well known. Both the current experience of youth who postpone their entrance into college and the effect of past events, such as the impact of World War II on post-war educational and occupational experiences, should be examined.
3. The experience with national service programs, such as the Peace Corps, should be reviewed and systematized.
4. Existing research on the economic returns to schooling should be pushed further into asking more specific questions as to where, for what type of schooling, and at what age level, these returns really exist.
5. An ongoing representative panel of young persons of ages 14-24 should be established to study the general characteristics of successive cohorts of youth. The panel would consist of separate cohorts, which would be followed until they leave this age period and then resurveyed again, intermittently, throughout their lifetimes.
6. Discussions of the desirability of various alternative environments for youth are very much hampered by the lack of appropriate instruments

to measure the impact of social institutions on those within them. Often, measurement is limited to measures of academic success (graduation and test scores) and economic success (income and occupation). These measures do not capture all important aspects of an institution's impact. More research is needed on non-cognitive measures of personal development and on more direct measures of social well being. The fact that we can neither measure nor agree on a definition of what constitutes a good life should not deter us from trying to improve the measures we have and to develop new ones.

In this section, three major issues have been discussed. They covered the need to support the study of objectives, development of non-cognitive tests to measure the effects of work experience and investigation of social change on a small scale pilot basis.

Research Recommendations Relating to Specific Problems and Issues of Work Experience

This section will be a summary of some previously discussed research questions and others not previously mentioned, which have a more specific focus than the broader issues discussed above. For the most part, they represent areas recommended for research in more than one of the references; that is, they are questions stated relatively frequently as needing initial or additional investigation.

A highly significant policy-base report dealing with specific issues, is expected to be completed by early summer. This is the study of the National Panel on High Schools and Adolescent Education, being prepared for the Secretary of the Department of Health, Education and Welfare and the Commissioner of Education. Although the conclusions of the Panel are not final, they have been much concerned with the issue of work experience for adolescents and have considered a number of issues of basic importance. They have studied, for example, the quality and efficacy of present vocational education, ways of providing a variety of work experiences with different combinations of

school, community, and employer involvement, and the necessity for developing methods of providing credit for learning achievement outside the classroom. The Panel has been particularly concerned with the necessity of having jobs available for youth when they are ready for employment, and the neutralization of barriers to youth employment such as minimum wage laws and workmen's compensation costs. The final report will contain the Panel's conclusions on these and other questions. Recommendations from other studies follow.

1. There are some areas in need of consideration which may be thought of as serving a facilitative function with regard to the employment of youth or the conduct of related research. One of these facilitative activities is to take the necessary steps to be sure jobs are available for youth--for those who want to participate in work-study arrangements and for those who are ready for full time employment. Preparing students psychologically and technically for jobs that do not exist obviously can have disastrous consequence. Therefore, a primary research need is the study of local and national job needs and the development of a job creation strategy to meet those needs--perhaps with leadership provided at the Federal level and with appropriate financial support made available for local investigations.
2. Additional studies need to be conducted related to the efficacy and effects of changing some of the present legislation which work to restrict the employment of youth under age eighteen, and makes illegal the employment of young people below age sixteen in some jobs. A frequent proposal is to experiment with a dual minimum wage, with the idea that a lower one for younger, inexperienced workers will make it more likely that employers will be willing to hire them.
3. Local investigations should encourage schools, employers, unions, and community agencies (as well as parents and students) to work together to determine local job needs and to develop training courses on a cooperative basis to meet those needs, courses which provide experience in actual work situations. Such activities would help establish presently missing linkages and lines of communication among the community groups which must work together to provide effective work-study

experiences for young people. Research should be designed to develop appropriate models for communication and cooperation.

4. Organizational structures for administering a variety of work experience programs need investigation. Multiple models need to be designed and evaluated--those involving traditional institutions using updated methods (the school systems and established community agencies), and new agencies and sponsors working outside the existing state and local vocational education system. The evaluations should be designed to determine what kinds of structures are best suited for particular purposes and for individuals with particular characteristics.
5. Research on each of the different kinds of work experience programs--on work-study, cooperative education, volunteer work, career education programs--and on any new structures should include studies of such program elements as planning methods, different ways of developing and installing curricula, analysis of counseling methods and needs, the development of job placement programs, and provisions for follow-up of terminated students. Both cost-benefit studies and studies to identify causal relationships should be undertaken.
6. It is believed that the research efforts in the volunteer work area particularly should be expanded beyond the present research emphasis on program evaluation. Important data already gathered on program and enrollee characteristics could be the base for examining such questions as the effects of nonpaid (or low pay) volunteer work as compared with other kinds of work experience and for what kinds of individuals it is most beneficial. Also, the question of how volunteer work may fit into the overall work experience picture is a significant one.
7. In order to evaluate work experience programs, it is recommended that in addition to cost-benefit studies, Federal agencies sponsor process studies of the political and organizational dynamics of the implementation of new programs. Information is needed on the effects of agency linkages, bureaucratic structures and management procedures on the success or failure of such programs. This recommendation includes school and community processes as well as Federal agency functioning.

8. Some Federal monies for research should go directly to local agencies and schools, rather than having state agencies control all the spending. It is hoped this will result in greater willingness to experiment with innovative organizational and instructional methods and make training more responsive to actual local job needs.
9. Further study is needed on ways of matching the individual to the kind and amount of work experience or instruction best suited to his needs, interests, and abilities. The degree of individualization which is both effective and practicable needs examination. Again, the costs versus the benefits need to be determined.
10. Increased effort is need to develop effective techniques for career guidance counselors in schools, colleges, manpower agencies and elsewhere to advise students how to prepare for jobs and careers, with equal consideration given to vocational preparation and academic learning, according to the needs of the individual.
11. In the matter of curriculum development, it is felt to be extremely important that the social responsibility which is inherent in many occupations be emphasized in instruction. For example, knowledge of the adverse effect on the environment of some occupations and the responsibility of each person for these effects should be included in vocational education and job training.
12. In addition to measuring the effects on individuals of work experience, in cognitive and noncognitive areas, studies are needed to measure the effects of work experience programs on the institutions involved--on schools, communities and community groups, employers, unions, and the labor force. The need to provide ways for students to move easily between school, work, and community settings and the development of a system to provide credit for learning in each of these environments is an example of such research. Another specific area of investigation is to experiment with increased flexibility in work scheduling, with regard to the number and arrangement of hours and days worked, and the time that might be made available by employers for study, community service, and leisure.

In the foregoing chapters, it has been pointed out that research in a few of these specific areas is underway but frequently is only just beginning. Any future research, undertaken

on an interagency basis must be planned with a view to the gaps that exist in the broad research picture, the findings of past and ongoing research and, of course, on the missions and research objectives of each individual agency.

More Guiding Principles for Research Programs

This section reviews some final principles appropriate for the overall planning and conduct of research. The first five statements are quotes or paraphrases of recommendations made in the chapter on research of the Report of the Joint Commission on Mental Health of Children. The intention has been to include the most relevant suggestions rather than to make a comprehensive statement of recommendations.

1. Assessment research must be made an integral part of existing research on model programs or pilot studies. The Joint Commission Report emphasizes the need "to redefine demonstration projects as innovative efforts which include evaluation and assessment as a central orientation...it is necessary to stress that no demonstration project should be funded without appropriate rigor and relevant assessment techniques." (Justman, 1968)
2. There is a drastic need for longitudinal studies that follow participants for many years and monitor their career experience and personal adjustment factors. New techniques are emerging which promise to reduce some of the difficulties associated in the past with longitudinal studies. These involve the inclusion of different age cohorts which can be studied during the same time period, so that as much as a twenty year age span can be studied within a period of as few as five years.
3. Studies of the characteristics of populations who participate in various kinds of work experience programs need to be planned on a systematic basis and the findings integrated to provide a comprehensive picture of the kinds of individuals who benefit most from different programs. Such information along with information on local community conditions, collected during different time periods, will assist in the planning of programs best suited to meet the needs of individual students.

4. Ways must be explored to further coordinate Federal research activities related to the conduct of work experience programs. These are currently being diversely planned and sponsored in a number of Federal agencies, and while diversity of research is to be recommended, it also leads to duplication of effort, both in the conduct of research itself and in the "shopping around" of researchers looking for funding. More study needs to be given to the mechanism of interagency coordination of research.
5. More work needs to be done in relation to the development of better definitions, research methods in general, and instruments for research in the work experience field. The need for the former has been mentioned in relation to core definitions for cost-effectiveness studies, while the need for instruments to measure the effects of work experience programs has been a central theme of this report. Monies for methodological research must be provided if research monies spent in other areas are to yield maximum results.
6. The development of quality program criteria based on empirical data is highly dependent on the availability of baseline data that include follow-up information on participants in work experience programs. In order to obtain this essential follow-up information, special techniques need to be developed. One method recommended is the financing of a staff trained to collect data on a regular basis by means of maintaining periodic contact with former participants. This need is related to the problem of sample attrition and both need further study.
7. To provide a base for research in each program and program area, a thorough review should be made of the literature related to the research areas to be investigated, as a starting place for the design of the research to be undertaken. This review should include information on ongoing and planned activities as well as completed research.
8. To facilitate the planning and conduct of research, studies are needed on the best means to provide for the dissemination of research results, between researchers in different agencies and between researchers and practitioners in the field. Conferences, information systems, and literature reviews are some of the means of dissemination that are available. These and others, it is recommended, should be included as part of the design of research whenever possible.

Conclusion

The recommendations for research relating to various aspects of work experience programs have covered the complete cycle of the research process, that is, they ranged from recommendations to review and synthesize relevant research as a base for further study, to suggestions to study and provide methods of evaluating and disseminating results of completed research. The major recommendations included the need for a statement of learner objectives in measurable terms to provide a basis for empirical evaluation of program effects, the validation of instructional materials and curricula before distribution (formative evaluation), the tryout of new social programs on a small-scale pilot basis with a built-in experimental design, and the development of measures for new kinds of objectives, that is, objectives in the social-emotional rather than the cognitive domain of personal development. These measures would include instruments to measure nonclassroom, experience-based learning.

In each of these recommendations, emphasis is on building an empirical base for instructional programs, in this instance, for those providing learning through work experience. The implementation of these recommendations would focus attention on the learner and add a scientific base to the approach which views teaching primarily as an art.

Perhaps the most significant question asked with regard to work experience programs is whether actual experience in a real working situation promotes social and emotional development beyond that which classroom learning can provide. This question has not yet been answered and few of the studies reviewed are attempting to answer it. An approach such as that outlined in the research recommendations will help to institute research which can provide the answer. As they suggest, a first step is to include personal growth goals in a statement of instructional objectives so they can be measured--with instruments that for

the most part have yet to be developed. But without the statement and the measurement, conclusions about the potential of experience-based learning on personal development are primarily conjectural.

If additional research continues to verify the findings of the Youth in Transition study (and the earlier Coleman study) that school programs and practices have little differential effect on the achievement of students, then research on alternatives and complements to the traditional school experience must be conducted and their effect on individual students assessed. Research dealing with the issues and questions reviewed above will help establish the efficacy and usefulness of work experience in a variety of settings as an alternative means of preparing youth for adulthood.

APPENDIX E

**GUIDELINES AND PROCEDURES
FOR USE OF
INTERAGENCY PANEL INFORMATION SYSTEM**

Section 1: Policy Guidelines for Release of Information from Information System

As the work of the Panels on Early Childhood and Adolescence Research and Development becomes more visible to interested agencies and persons outside the Federal government, a greater demand will be placed on the information system for retrieving and disseminating information.

Sources Requesting Information

It is anticipated that the majority of requests will originate from the following sources:

- a. Panel agencies;
- b. Congressional personnel;
- c. Non-Panel Federal agencies;
- d. State and local agencies;
- e. Foundations;
- f. Professional organizations;
- g. Researchers in the academic community; and
- h. Professional journals and media representatives

Information Available

The Social Research Group has the following types of information available on projects in the system:

- a. Title of the project and sponsoring agency;
- b. Name, address, and institution of the principal investigator;
- c. A coded classification of the project, using the classification system developed by the Social Research Group staff;
- d. An abstract of the content of the project proposal, or the Science Information Exchange Abstract, or agency prepared abstract; and
- e. Funding for the fiscal year.

The information release policy and guidelines are based on the type of information provided by the funding agency. Given the assumption that the information available is intended to function as a guide to direct the requestor toward the principal investigator and/or the sponsoring agency for further information, the abstracts are kept as short and concise as possible. For those agencies who feel that the proposals contain information too explicit for dissemination, abstracts are prepared on the basis of either the Science Information Exchange abstracts or those prepared by the staff of the agency in question.

Therefore, the policy of both Panels is that all abstracts should be available to non-Panel requests.

Although the funding levels are a matter of public record and thus are available to any requestor, the Social Research Group will not include this information in response to a general request. When a specific request for funding information is received, it will be honored.

In order to keep the Panel members informed of requests received by the Social Research Group, a log is kept of the following information:

- a. Name of requestor;
- b. Nature of request; and
- c. Information supplied in terms of the data maintained in the Social Research Group information system.

Reports on requests and responses will be made at the regular meetings of the Panels.

Section 2: Contents of the Interagency Panel Information System and User Information System and User Request Procedure

Early in the formative stages of the Interagency Panel on Early Childhood Research and Development, it was clear that in order to accomplish the goal of sharing data and coordinating planning, the Panel would need a system both for collecting and

disseminating information about the ongoing research of Panel members. The system decided upon was a data bank incorporating information about the grants and contracts of the agencies, which pertained to early childhood research and development.

In the first year, the Panel developed a pilot research classification scheme, and research data was classified by each agency member of the Panel. For fiscal year 1971, the agencies again classified their own data, and this data became the basis for the computerized data bank. The decision was made to combine the systems into a unified classification scheme and to computerize the information to accommodate a growing volume of information and to allow for more detailed analyses of the data.

How the System Works

At the present time the grants and contracts for research and development in early childhood of the member agencies are characterized by use of a classification system which transforms the essential facts of each project into numbers. These facts include details relating to the process of child development and the various environmental influences, including intervention programs, which affect this development. The numbers associated with the relevant details for each project are entered onto a magnetic tape by the computer, along with the funding level and identifying information both on the agency sponsoring the research and the recipient of the grant or contract funds.

The data system is composed of three major files: (1) the name file; (2) the numeric file; and (3) the funding file. These files have been merged to form one data system master file.

(1) The name file contains the name of the funding agency, the agency identification number of the project, the project title, the recipient institution's name and address, and the principal investigator's name and address.

(2) The numeric file contains classified descriptors, any one of which may have been entered in the computer, depending on whether it qualified to describe some relevant characteristic of a given project.

(3) The funding file contains fiscal year funding for 1973.

Requests may be made for any or all of the above information for one or more projects. In addition, brief resumes are available for FY '73 projects which summarize project objectives and methodology. This "literal" information may be requested separately, or the appropriate resumes may be attached to accompany information requested from the computer files.

How to Make a Request

A request for information about the projects included in the data system may be made by a written request, or a telephone call followed by a written request. The request should include a description which gives the specific characteristics in which the requestor is interested, including the nature of the sample (e.g., gifted, six years olds) and/or a description of the research foci (e.g., cognitive development, metabolism, nutrition studies). Requests may be made for project information from all agencies or from individual agencies. A typical example of a request might be:

Send titles and funding of studies that deal with preschool programs for Indian children, and have cognitive and/or social/emotional components, for all agencies.

In general, the more that the staff knows about the interests of the person making the request, the better will be the information provided. A simplified version of the classification scheme, presently being constructed, will assist users in knowing the kind of detailed project information that is available.

Project Catalog Available

In addition to meeting specialized requests, a "cataloging" of standard information on each project in the system will be made available to Panel members who wish to receive it. The catalog will be organized by agency and will include a brief resume of objectives and methodology, as well as the following information for each project:

- a. Funding agency
- b. Computer file number assigned to agency
- c. Title of grant or contract
- d. Name of recipient institution and address
- e. Name of principal investigator and address
- f. Funding level for current fiscal year

Agencies Currently in the System

Each project within the data system has a unique five-digit computer identification number. The first two digits represent the agency number and the last three digits stand for the number of particular project in the agency.

<u>Agency Code</u>	<u>Agency</u>
01	Maternal and Child Health Service (MCCHS)*
02	National Institute of Mental Health (NIMH)
03	National Institute of Child Health and Human Development (NICHD)
05	Office of Child Development (OCD)
07	Social and Rehabilitation Service (SRS)
08	OE, Bureau of Education for the Handicapped (BEH)
13	National Center for Educational Technology (NCET)
15	National Institute of Neurological Diseases and Stroke (NINDS)
16	OE, Bureau of Elementary and Secondary Education, Division of Plans and Supplementary Centers (Title III)

*MCCHS is now part of the Bureau of Community Health Services, Health Services Administration

**Agency
Code**

Agency

23	OE, Bureau of Elementary and Secondary Education, Division of Bilingual Education (Title VII)
24	Department of Agriculture (USDA)
25	OE, Bureau of Occupational and Adult Education (BOAE)
26	OE, Office of Planning, Budgeting, and Evaluation (OPBE)
29	Department of Labor (DOL)
30	National Institute of Education (NIE)

For research information, call or write:

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